THE OIL WEEKLY

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The Oil Man's Calendar

MAY	
8–11	American Gas Association, Natural Gas Division, Tulsa, Oklahoma.
9–11	American Institute of Chemical Engineers, Akron, Ohio.
15–18	American Petroleum Institute, Mid-Year Meeting, New Orleans, Louisiana.
18–20	National Oil Scouts Association, Houston, Texas.
21–25	National Association of Purchasing Agents, San Francisco.
JUNE	
3	Illinois-Indiana Petroleum Association, Robinson, Illinois.
15–16	Pennsylvania Grade Crude Oil Association, Hershey, Pa.
JULY	
10–17	American Institute of Mining and Metallurgical Engineers Regional Meeting, San Francisco, Calif.
AUG.	
1– 6	The Eastern United States Michigan Oil & Gas Exposition, Mt. Pleasant, Michigan.
SEPT.	
4– 8	American Society of Mechanical Engineers, New York.
5	Oil Workers International Union, Hammond, Ind.
9–13	American Chemical Society, Detroit, Mich.
14–15	National Petroleum Association, Atlantic City, N. J.
OCT.	
9–10	American Gas Association Annual Convention, New York.
16–20	National Safety Congress, Atlantic City, N. J.
18–20	Independent Petroleum Association of America, Fort Worth, Texas.
NOV.	
13–17	American Petroleum Institute, 20th Annual Meeting, Stevens Hotel, Chicago.

Contents « May 15, 1939

Volume 93, Number 10

The Changing Panorama 11-12

Feature Section 13-44

Drilling Follows Conservative Trend of 1935 13
By L. J. LOGAN

Measurement and Regulation of Production Unusually High Pressure Gas Wells 16
By J. J. CARTER AND C. E. WEBBER

Applying High Explosive in Completing Oil Wells 28
By BEN ALTMAN

Time Switches Factor in Reducing Lifting Costs 35
By W. C. LANE

Structures in Sparta-Wilcox Trend Disclosed by Magnetics 42
By WILLIAM M. BARRET

Geology of the Klene Structure in Arizona 44
By DONALD K. MACKAY

News Section and News Index 55

Men in the Industry's News 53

World Developments 51

Notes for the Equipment Buyer and User 90

Squeaks from the Bull Wheel 97

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How Haystellite Inserts and Tube Rod *cut drilling costs*

THE bit shown at the right drilled 2,506 feet of out-to-gauge hole in the East Texas field. This bit went in at 100 feet, just below the surface pipe, and completed the well, making 2,441 feet of shale and shells, 25 feet of broken chalk and 40 feet of Pecan Gap chalk. It was well fingered and in excellent condition when pulled. The bit was hard-set with Haystellite inserts and hard-faced with Haystellite tube rod.

Variety of Sizes Available

Haystellite inserts are made in twelve sizes and seven cross sections. Haystellite tube rod, used for hard-surfacing the bit after it has been hard-set with Haystellite inserts, is available in five sizes of rod containing eight different screen sizes of tungsten carbide particles. Therefore, bit dressers can select the best combination of inserts and tube rod for each bit.

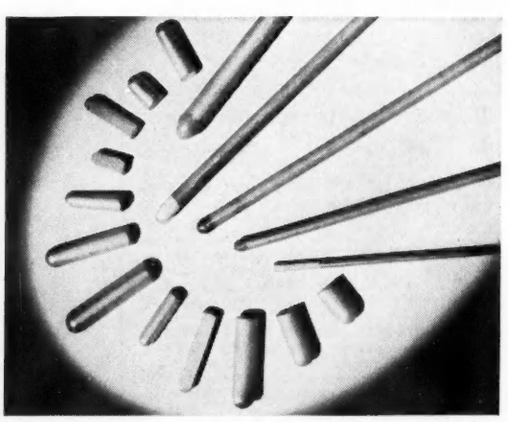
More Footage per Round Trip

Bits dressed with Haystellite tungsten carbide products cut drilling costs because they drill more footage of out-to-gauge hole per round trip—and take less time to do it. Write for the 36-page book, "Haynes Stellite Products in the Oil Fields, O1-16," which tells when and how to use these products for best results.

FORMATIONS DRILLED

Shale and Shells .	2,441 feet
Broken Chalk . .	25 feet
Pecan Gap Chalk .	40 feet

2,506 feet with one bit.



Haystellite inserts and Haystellite tube rod are shown about one-third actual size.

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THE OIL WEEKLY

This Week's Panorama

IN recent statements to stockholders, in connection with annual reports for 1938 and reports for the first quarter of 1939, oil company executives have appeared moderately hopeful, although they have pointed out various unsatisfactory conditions in the industry.

William F. Humphrey, president of Tide Water Associated Oil Company, assured stockholders that in spite of unsatisfactory current conditions, there was some "hope of improvement in the not distant future."

Conditions Fairly Satisfactory

A. Jacobsen, president of Amerada Corporation, in commenting to stockholders on the outlook for the industry, said that "taken by itself and forgetting for the moment the effect of it on general business, I think one can say that conditions are fairly satisfactory. They are not perfect. We are still troubled by overproduction to some extent. Some of the states are not 'playing ball' as well as they might, but even there the tendency seems quite definitely to be towards greater cooperation."

Unit Operation Advocated

In line with the constant efforts in the oil industry to achieve greater efficiency and economy in operations, wider application of unit development of oil fields is being actively urged again, despite the discouragingly small progress made so far in putting the idea into actual practice.

Frank Phillips, chairman of the board of Phillips Petroleum Company, is a particularly earnest advocate of unitization, having commended it recently in the annual report to stockholders and also in a round table speech at the annual convention of the United States Chamber of Commerce.

In the annual report he stated: "Our company has actively furthered the practice of unitization. Under this plan the properties of all companies in a given area are consolidated and operated as one producing unit, in which each company receives an interest based on the value of its properties. Unitization decreases investment and increases earnings because fewer wells are drilled, wasteful competitive practices are eliminated, natural lifting energy is better conserved, and recoverable values are increased."

At the chamber of commerce convention, Phillips declared that effective conservation of the nation's oil resources and ultimate recovery of the total underground wealth could never be achieved until there was communization of properties.

Because of applying the rule of capture instead of operating pools as units, he asserted, millions of dollars are being spent in drilling unnecessary wells, resulting in both physical and economic waste.

"The total allowable production from many of our pools could be produced with one fourth the present number of wells," he declared.

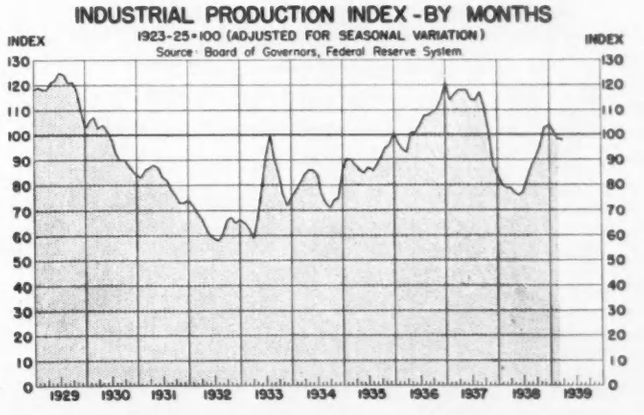
Unitization Proves Desirable

"In some cases, however," Phillips continued, "properties have been communized by voluntary agreement, with each lease and land owner receiving his proportionate share of the oil in the common reservoir. Competitive drilling is thus eliminated, fewer wells are drilled, and the gas produced with the oil is pumped back into the structure, maintaining pressure in the sands over a long period of time and enabling us to produce twice as much oil from the pools as could be recovered with wasteful competitive operation of each property.

"It is not unlikely that in the future, with this system of operation, we shall be able to extract practically all of the oil in any pool."

Illinois Block Unitized

Another oil company executive who lately commented favorably on unitization was Henry M. Dawes, president of The Pure Oil Company. In his annual report to stockholders, he expressed gratification with results achieved by the company in the unitization of a 300,000-acre block of leases in Illinois. "Acting consistently with its policy in other fields, notably at Van," he said, "the company shaped its



This chart, showing the recent unfavorable trend of general business activity, attests the need for conservative crude oil production and refinery runs. For unless the business recession is soon halted, petroleum consumption may be expected to become less favorable; and in the meantime, avoiding excessive inventories of oils would be economically desirable.

The Federal Reserve Board's index of industrial production stood at 104 percent of the 1923-1925 average in December, declined to 101 in January, was at 98 in both February and March, and declined somewhat further in April.

operations from the beginning with the hope of being able to carry them on in conformity with the objectives of unitization. In this way, the drilling of unnecessary competitive wells has largely been avoided, decreasing very greatly the ultimate cost of the operation . . . The company has succeeded to an unusual degree in conforming to the general principle of drilling not more than one well to every 20 acres, which is considered a conservative course for fields of this general character."

Large Stocks Mar Gasoline Picture

SOME improvement in the gasoline situation was reflected in the statistics of the industry for the week ended May 6, which showed a sharp curtailment of crude runs to refinery stills, a resultant decrease in gasoline production, and a moderate reduction in gasoline stocks.

Despite the sharp reduction of refinery runs, however, the throughput of the plants remained comparatively large, as the runs in the previous week, ended April 29, had been at the highest peak since early fall of 1937. (The runs averaged 3,275,000 barrels daily in the week of May 6, as compared with 3,405,000 barrels daily the week before.)

Furthermore, the withdrawal of gasoline from storage in the week ended May 6 was comparatively small, having amounted to only about one half million barrels; and the decrease was not particularly encouraging, as it came only after the stocks had remained practically unchanged for the month of April, whereas a substantial withdrawal is normal for that month.

The gasoline stocks totaled 87,277,000 barrels at the commencement of the heavy consuming season April 1, and at that level were considered by petroleum economists as excessive by 5,000,000 to 7,000,000 barrels. Consequently, not simply a normal but a greater than normal withdrawal of gasoline from storage in April would have been economically desirable. But actually, with crude oil production excessive and refinery runs similarly above economic levels, gasoline production was too large in April to permit any material reduction of the gasoline inventory, and by May 6 the stocks had come down by a net amount of only about a million barrels to 86,210,000 barrels.

Therefore, the gasoline stocks apparently are considerably farther out of line with requirements than at the beginning of April.

The stocks of 86,210,000 barrels on hand May 6, 1939, were only 3.6 percent smaller than those of 89,464,000 barrels held May 7, 1938, whereas in the early part of this year they were around 10 percent under a year previously.

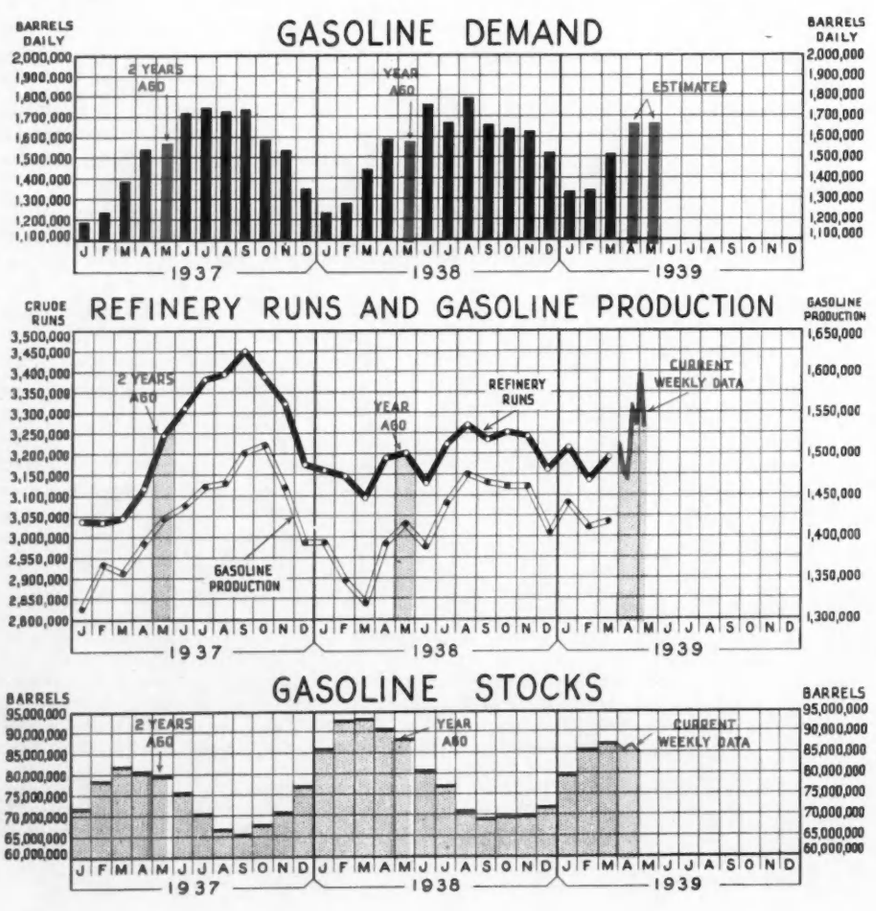
As the stocks approach nearer the proportions of last year, the threat of a serious surplus becomes increasingly ominous. For not many weeks after the beginning of spring last year, when the gasoline stocks reached an all time peak of about 92,000,000 barrels, the gasoline market underwent a serious decline, from which it has recovered only to a negligible extent.

Being now only 3.6 percent lower than a year ago, the gasoline stocks naturally give rise to some fears that last year's unsatisfactory experience may be repeated, despite the semblance of strength that the gasoline market has displayed.

The optimism that has arisen undoubtedly has resulted from the comparatively good demand for gasoline that has prevailed so far this year (about 6 percent larger than last year) and on the questionable assumption that brisk demand certainly will continue.

Similarly, the heavy runs of crude oil to refinery stills and the resultant large production of gasoline also probably have been based to some extent on enthusiasm over the prevailing and prospective rates of gasoline consumption; although the refining branch of the industry is not wholly responsible for large crude runs, having been forced to process some surplus oil because of excessive crude oil production.

Over-optimism in 1937 regarding oil consumption led to the burdensome inventories and depressed markets of 1938; and the 1937-1938 record appears particularly significant at this juncture, as general business activity has been lagging since the beginning of this year, and as oil consumption ultimately follows the general trend.



Drilling Follows Conservative Trend of 1935

April fails to bring normal seasonal increase of completions, but gain in active rigs during month indicates more new wells likely in May.

By L. J. LOGAN, Associate Editor

DRILLING failed to show the normal seasonal expansion in April, well completions having continued at approximately the same daily average rate as in March. But substantially more rigs were in operation on May 1 than on April 1, indicating that May will bring an increase in completions this year, as in most years in the past.

The failure of drilling to increase in April this year, as in most other years in the recent past, probably resulted from the greatly disturbed condition of the markets during the month.

Crude oil production was increased materialy above market requirements, under liberalized allowables, and the large crude output was conducive to excessive refinery runs. Crude oil was forced into storage, and inventories of refined products were unfavorably affected. The excesses of crude production and refinery runs promoted unsettled markets for both crude and refined oils, and the market situation naturally did not encourage drilling.

Activity Near 1935 Level

The level to which drilling activity settled down in April was practically the same as that in April of 1935, and it now begins to appear that 1939 completions may closely approximate or slightly exceed those of 1935. This means that 23,000 to 24,000 completions are suggested for 1939, which would be 12 to 16 percent less than the 27,528 in 1938. (In 1935, new wells totaled 22,669.)

Well completions in the United States in April averaged 62.3 daily, having declined fractionally from the 62.4 daily in March. The completions were 11 percent lower in April, 1939, than in April, 1938.

Presented herewith are figures showing the amount of drilling that has occurred in April in each of the six years prior to this year.

April of:	Average Number of Wells Completed Daily
1933	24.8
1934	47.2
1935	62.6
1936	75.4
1937	89.8
1938	70.1
1939	62.3

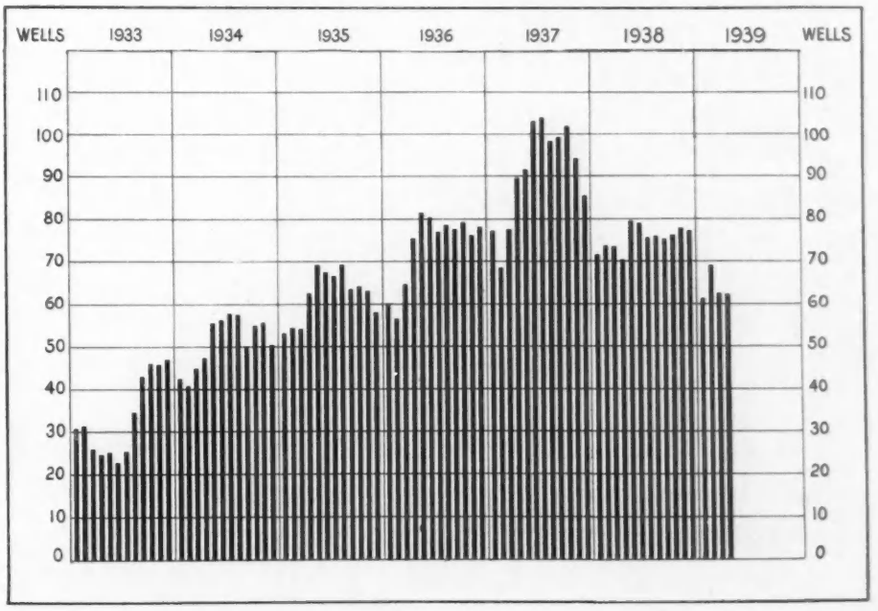
These figures show that in April, field development was proceeding on practically the same plane as in April, 1935, and that the activity was substantially lower than at the corresponding time in 1936, whereas completions had been closely following the 1936 trend in the first three months of this year.

In April of 1936, however, drilling increased sharply, and it remained comparatively brisk the remainder of that year, completions for the 12 months having totaled almost 27,000 wells.

The field work failed to show such an expansion this April, and it now appears almost certain that the 1936 pattern will not be further retraced this year.

However, it does appear quite possible that completions for 1939 may equal or exceed those of 1935,

Average Number of Wells Completed Daily in U. S.
(By Months, January, 1933-April, 1939)



inasmuch as the first four months of this year furnished 7572 new wells, compared with 6728 in the corresponding period of 1935, and as activity was practically the same in April, 1939, as in April, 1935.

After April, 1935, there was some further expansion of drilling, and activity remained comparatively brisk the remainder of the year, although it declined in the latter part of the year toward the spring levels.

A similar trend of drilling for the rest of this year appears a definite possibility, and if it materializes, 1939 probably will have furnished, as indicated above, 23,000 to 24,000 new wells.

First Four Months

In the first four months of 1939, well completions in the United States were 12.4 percent less numerous than in the similar period of 1938, the total having been 7572, against 8653 in the first four months of last year.

Some Areas More Active

However, several districts have continued more active this year than last year, in the face of the decline from a year ago for the country and for most areas.

Illinois remains conspicuously in the spotlight, having furnished over five times as many new wells in the first four months of 1939 as in the corresponding period last year. The completions in the state through April totaled 1117, compared with 212 up to that time last year. Illinois ranks second to Texas in completions for 1939, and has been furnishing more new wells than Oklahoma and Kansas combined.

The Illinois development has encouraged active drilling also in the adjoining states of Indiana and Kentucky, and Indiana has had 17 percent more completions this year than last year, while Kentucky has registered only a 3 percent decrease.

Michigan continues to compete with the Illinois region in active field development, having furnished 50 percent more new wells in the first four months of 1939 than in the corresponding period of 1938, the completions having totaled 365 against 244. Development of new fields in the southwestern part of the state has been largely responsible for the brisk activity in Michigan, and another stimulant to drilling has been the recent raising of crude prices in most Michigan fields.

Other areas that have had more drilling this year than last year included the Rocky Mountain states of Colorado, Montana, New Mexico, and Wyoming.

In the Mid-Continent, the only state that has been more active this year than last year has been Arkansas, although West Central Texas and the Corpus Christi and San Antonio areas of South Texas have furnished more new wells also, while the Texas Gulf Coast supplied the same number in the first four months of this year as in the corresponding period last year.

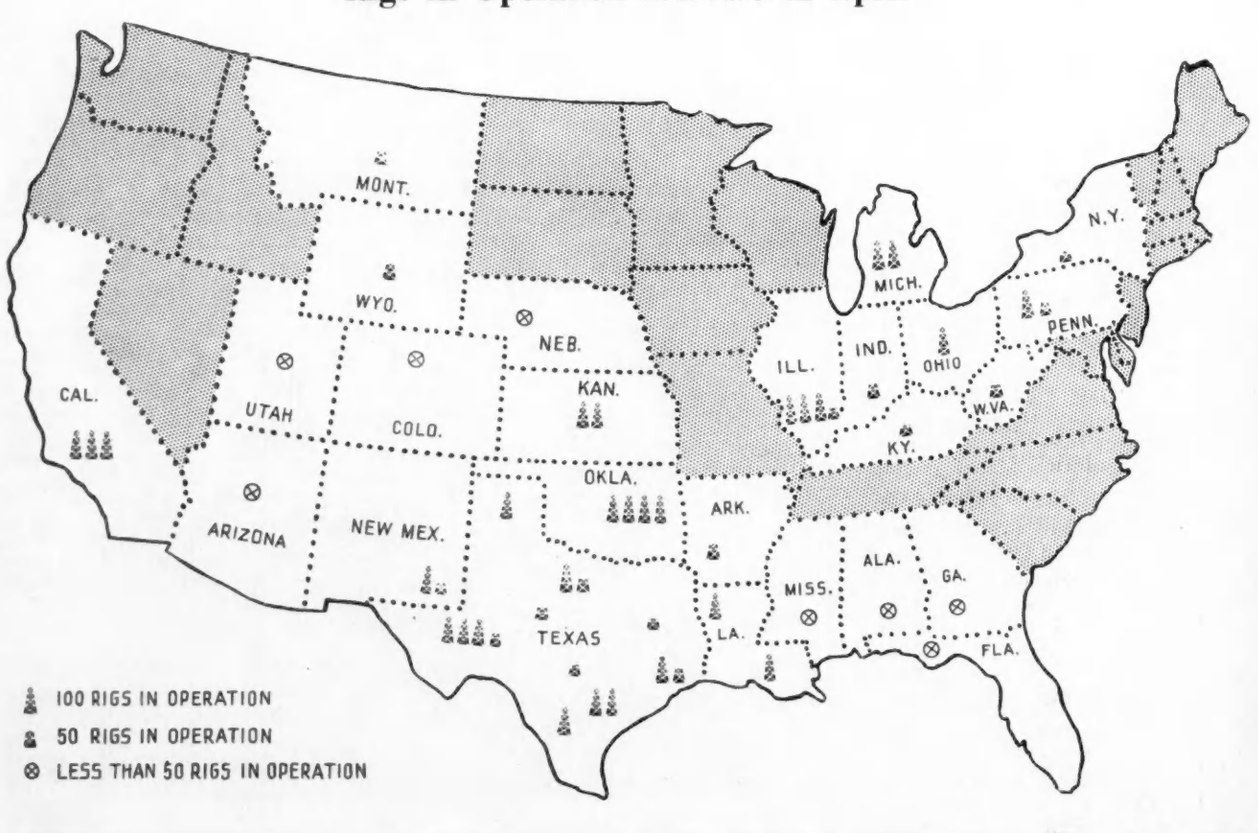
Declines in Other Areas

Areas not mentioned above had fewer completions in the first four months of 1939 than in those months of 1938.

California had some revival of drilling in April, but for the first four months completions were down 30 percent from last year, having totaled 321 against 459.

In the Appalachian region, drilling has been sharply lower this year than last year, despite several increases in prices of Pennsylvania grade crude in recent months.

Rigs in Operation Increase in April



Kansas furnished only 366 new wells in the first four months of this year, compared with 587 in the similar period last year, a decrease of 37.7 percent.

But Oklahoma has made a better showing, having accounted for 588 completions against 672 in last year's first four months, a decrease of 12.5 percent, or about the same as that for the country as a whole.

Louisiana has had 8.4 percent fewer completions than last year, as drilling has been 14.5 percent lower in North Louisiana and 3.4 percent down in the coastal district of the state.

Texas furnished only 3026 completions in the initial four months of this year, or 26.1 percent less than the 4095 in the similar period last year, as decreases occurred in Eastern Texas, North Texas, the Texas Panhandle, and West Texas.

Drilling Rigs in Use

Drilling rigs in operation in the United States totaled 3630 on May 1, 1939, as indicated in detail in an accompanying table. That was 5.3 percent more than the 3448 in operation one month before, although 8.6 percent less than the 3971 in use one year previously.

Number of Drilling Rigs In Use Shows Seasonal Increase

STATE OR DISTRICT	TOTAL RIGS IN OPERATION (Drilling, Rigs Up, Shut-Down)				DETAILS OF MAY 1, 1939, ACTIVITY					
					Rigs in Operation			Prelim. Activity		
	May 1, 1939	April 1, 1939	May 1, 1938	Percent Change from Year Ago	Drilling	Rigs Up	Shut-down	Derricks	Locations	Total Operations
Arkansas	37	35	44	— 15.9	28	2	7	5	1	43
Arizona	6	6	....	....	4	....	2	....	....	6
California	310	302	388	— 20.1	176	78	56	24	34	368
Colorado	23	22	26	— 11.5	6	1	16	....	....	23
Eastern States	853	771	625	+ 36.5	519	134	200	73	80	1,006
Illinois	357	279	157	+127.5	238	61	58	38	27	422
New Fields	170	190	97	+ 75.2	110	31	29	20	15	205
Rest of Illinois	187	89	60	+210.2	128	30	29	18	12	217
Indiana	45	37	25	+ 80.0	26	2	17	1	8	54
Kentucky	73	70	54	+ 35.1	31	5	37	14	22	109
New York	31	31	20	+ 55.0	18	8	5	2	4	37
Ohio	126	119	138	— 8.7	71	20	35	7	2	135
Pennsylvania	158	172	115	+ 37.4	99	29	30	10	15	183
West Virginia	63	63	116	— 45.7	36	9	18	1	2	66
Kansas	205	179	262	— 21.7	125	26	54	18	14	237
Louisiana	193	214	233	— 17.1	163	13	17	14	38	245
North Louisiana	72	82	100	— 28.0	57	4	11	3	2	77
South Louisiana	121	132	133	— 9.8	106	9	6	11	36	168
Michigan	183	163	173	+ 5.8	130	26	27	20	28	231
Montana	49	49	51	— 3.9	21	....	28	....	4	53
Nebraska	1	1	3	— 66.7	1	....	....	....	....	1
New Mexico	144	126	114	+ 26.3	115	9	20	4	10	158
Oklahoma	391	289	358	+ 9.2	272	34	85	29	17	437
Southeastern States	22	18	20	+ 10.0	11	....	11	3	....	25
Alabama	4	4	4	....	1	....	3	....	....	4
Florida	5	5	4	+ 25.0	2	....	3	1	....	6
Georgia	2	....	1	+100.0	2	....	....	....	....	2
Mississippi	11	9	11	....	6	....	5	2	....	13
Texas	1,140	1,203	1,607	— 29.0	860	77	203	67	354	1,561
East Texas Field	11	5	71	— 84.5	9	2	....	2	1	14
East Texas Border Co.'s	5	9	36	— 86.2	3	....	2	2	....	7
Rest of East Texas	38	39	43	— 11.6	19	5	14	4	5	47
North Texas	162	163	356	— 54.5	113	12	37	13	58	233
South Texas	300	340	344	— 12.8	236	25	39	19	84	403
Corpus Christi Area	172	180	177	— 2.8	146	15	11	6	55	233
Laredo Area	70	95	96	— 27.0	52	7	11	7	20	97
San Antonio Area	58	65	71	— 18.3	38	3	17	6	9	73
Texas Gulf Coast	135	144	156	— 13.4	123	7	5	18	74	227
Texas Panhandle	81	77	139	— 41.6	66	10	5	3	8	92
West Texas	326	342	386	— 15.5	252	12	62	6	115	447
West Central Texas	82	84	76	+ 7.9	39	4	39	....	9	91
Utah	1	1	6	— 83.2	1	....	....	....	....	1
Wyoming	72	69	61	+ 18.1	30	2	40	....	1	73
Total United States	3,630	3,448	3,971	— 8.6	2,462	402	766	257	581	4,468

Well Completions and Crude Oil Production Remain Lower in 1939 Than in 1938

STATE OR DISTRICT	APRIL, 1939, COMPLETIONS AND CRUDE OIL PRODUCTION†						COMPLETIONS AND PRODUCTION IN FIRST FOUR MONTHS, 1939 AND 1938								
							WELLS COMPLETED			DETAILS OF 1939 DRILLING				BARRELS PRODUCTION		
	Total Wells	Oil	Gas	Dry	Initial Production	Production for April	1939: 4 Mos.	1938: 4 Mos.	Percent Change	Oil	Gas	Dry	Initial Production	1939: 4 Months	1938: 4 Months	Percent Change
Arkansas	11	9	....	2	5,282	1,614,000	67	66	+ 1.5	51	.....	16	19,259	6,342,850	5,788,800	+ 9.6
California	86	70	1	15	57,346	18,514,300	321	459	— 30.0	255	1	65	190,691	74,659,500	86,945,200	—14.1
Colorado	3	....	1	2	....	108,500	9	3	+200.0	1	2	6	210	462,000	496,150	— 6.8
Eastern States	526	330	86	110	61,432	‡2,994,850	2,294	2,000	+ 14.7	1,462	373	459	258,445	‡11,596,750	16,681,150	.....
Illinois	253	187	1	65	58,978	5,010,850	1,117	212	+427.0	869	14	234	247,597	18,481,950	.....	.....
Indiana	11	3	3	5	80	.....	41	35	+ 17.2	10	11	20	1,755	.....	.....	.....
Kentucky	46	17	10	19	1,408	.....	195	201	— 3.0	83	29	83	6,923	.....	.....	.....
New York	38	36	1	1	157	.....	*153	*245	— 37.5	*129	18	6	541	.....	.....	.....
Ohio	46	10	24	12	241	.....	*240	283	— 15.2	44	127	69	569	.....	.....	.....
Pennsylvania	102	71	27	4	114	.....	*380	*772	— 50.8	*302	59	19	406	.....	.....	.....
West Virginia	30	6	20	4	454	.....	168	252	— 33.4	25	115	28	655	.....	.....	.....
Kansas	82	53	6	23	64,065	5,042,400	366	587	— 37.7	255	14	97	313,440	18,594,500	20,850,550	—10.8
Louisiana	70	49	3	18	15,716	7,992,200	293	320	— 8.4	193	11	89	61,834	30,655,050	30,838,950	— 0.5
North Louisiana	32	28	1	3	8,457	2,234,050	124	145	— 14.5	88	5	31	29,740	8,639,850	9,478,800	—12.0
South Louisiana	38	21	2	15	7,259	5,758,150	169	175	— 3.4	105	6	58	32,059	23,075,000	21,360,050	+ 8.0
Michigan	95	54	2	39	23,054	1,805,600	365	244	+ 49.6	208	9	148	88,785	6,671,650	6,136,600	+ 8.7
Montana	11	6	3	2	156	427,750	33	18	+ 83.3	23	3	7	1,402	1,650,700	1,595,750	+ 3.5
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Mexico	39	32	....	7	27,521	3,282,900	177	156	+ 13.4	151	4	22	103,700	12,558,800	13,717,900	— 1.2
Oklahoma	148	92	11	45	62,687	13,498,900	588	672	— 12.5	357	37	194	147,558	52,545,500	62,112,450	—15.4
Southeastern States	.....	.....	.....	.....	.....	.....	2	9	— 78.0	.....	.....	2	.....	.....	.....	.....
Alabama	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	1	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mississippi	.....	.....	.....	.....	.....	.....	1	7	— 85.6	.....	.....	1	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	.....	.....	1	—100.0	.....	.....	.....	.....	.....	.....	.....
Texas	671	466	16	189	271,941	42,994,600	3,026	4,095	— 26.1	2,217	73	736	1,603,531	161,937,100	156,973,250	+ 3.2
East Texas Field	9	9	....	....	25,950	13,332,550	200	785	— 74.5	198	.....	2	576,379	47,381,550	53,776,650	— 8.3
Rest of East Texas	25	11	1	13	2,431	3,146,850	91	174	— 47.7	41	9	41	9,993	11,668,800	11,238,900	+ 3.9
North Texas	113	68	....	45	33,404	2,520,900	480	693	— 30.8	297	1	182	127,883	7,[illegible]	8,427,200	—14.8
South Texas	189	128	4	57	57,495	7,512,900	891	881	+ 1.1	620	19	252	248,937	2[illegible]	27,039,550	+ 9.5
Corpus Christi Area	87	70	1	16	47,281	.....	399	374	+ 6.7	324	11	64	209,684	.....	.....	.....
Laredo Area	71	41	3	27	9,186	.....	345	364	— 5.4	226	7	112	34,123	.....	.....	.....
San Antonio Area	31	17	....	14	1,028	.....	147	143	+ 2.8	70	1	76	5,140	.....	.....	.....
Texas Gulf Coast	103	75	5	23	23,651	6,653,900	469	469	.....	359	21	89	84,814	26,[illegible]	23,[illegible]	+11.0
Texas Panhandle	27	20	4	3	6,144	2,133,930	107	220	— 51.4	85	16	6	31,2[illegible]	7,837,[illegible]	7,[illegible]	— 0.7
West Texas	156	140	....	16	120,317	6,744,800	645	773	— 16.5	569	2	74	519,511	25,[illegible]	22,611,400	+13.3
West Central Texas	49	15	2	32	2,549	951,000	143	100	+ 43.0	48	5	90	4,76[illegible]	2,746,250	3,464,100	—20.8
Wyoming	3	2	....	1	461	1,685,150	31	25	+ 24.0	19	1	11	7,246	6,412,250	5,839,200	+ 9.8
Total United States	1,745	1,163	129	453	589,661	105,172,200	7,572	8,653	— 12.4	5,192	528	1,852	2,736,967	4[illegible],811,850	4[illegible],937,950	— 0.8

† April completions cover not the calendar month, but the four weeks, or 28 days ended April 22.
* Includes water input wells.
‡ Does not include Illinois.

Measurement and Regulation of Production from Unusually High Pressure Gas Wells

By J. J. CARTER and C. E. WEBBER*
Humble Oil & Refining Company

THE measurement of high-pressure gas will be discussed in two parts. The first part will deal with the measurement of a dry gas which, if subjected to moderate changes in temperature and pressure, will still remain a gas. The second part will consider the measurement of a wet gas which carries some entrained liquid and would yield a distillate upon reductions of temperature and pressure.

Dry-gas measurement does not present the difficulties that are involved in wet-gas measurement and will be discussed first. Dry gas at extremely high pressures can be metered accurately in a manner similar to gas at low pressures. The only difference is in the magnitude of the gas law deviations. The specific gravity of the gas can be determined by the conventional gravity balance method. Coefficient correction factors are available in all meter books.

Gas Law Deviations

As we all know, hydrocarbon gases at high pressures do not obey Boyle's law. The deviations become very large in certain cases and cannot be neglected in computing orifice coefficients. The compression of a gas at constant temperature causes an increase in its density. The actual increase is greater than that calculated from the gas laws. Because the actual density is greater than the calculated value, the resulting actual volume is less than that calculated by Boyle's law. This deviation in density is a maximum in the vicinity of 2500 pounds per square inch and above that decreases to almost nothing in the vicinity of 5000 pounds per square inch.

Conversely, a gas which has already been compressed at high pressures, will, upon expansion at constant temperature, give a volume larger than that expected from calculations by Boyle's law. This deviation can be corrected by a factor which we commonly call in gas measurement, the super-expansibility factor. The reciprocal of this super-expansibility factor can be referred to as the super-compressibility factor. A series of curves (Figure 1) for the super-compressibility factor for pure methane are shown. Naturally-occurring hydrocarbon gases follow this general trend of curves. The magnitude of deviation depends upon the composition of the gas because the heavier hydrocarbons have higher compressibilities. It can be seen from the curves that temperature has quite a pronounced effect upon these compressibility factors.

As previously mentioned, a gas which has been compressed to a high pressure, upon expansion at constant temperature, results in a volume larger than would be expected. The gas, therefore, acts as if it were originally under a higher pressure than that used in computing its volume from Boyle's law. The basic orifice equation is:

$$Q_h = C' \sqrt{h_w P_f}$$

Where— Q_h = Volume of gas per unit time.
C' = Orifice factor made up of general constants.
h_w = Head in inches of water.
P_f = Absolute pressure of flowing gas.

Since the gas behaves as if it were under some higher pressure, a correction factor must be applied to raise the actual pressure (P_f) to this higher effective pressure. This factor is usually called a "Y factor" and it is the reciprocal of the value Z shown on the deviation curves for methane:

$$Y = \frac{1}{Z} \qquad \text{Where } Z = \frac{PV}{P_0 V_1}$$

The common procedure adopted in the orifice meter books is to apply this "Y factor" to P_f as a separate correction factor. Since the pressure, P_f, appears under the square-root radical, any correction will naturally be a square-root factor. Therefore, the square-root of Y is introduced as a separate correction and is usually denoted by F_{pv} in the orifice-meter equation.

Several methods can be used for determining the Value Z and, in turn, the value F_{pv}. The most convenient method for dry gas is that devised by H. S. Bean.[1] In his procedure, a gas to be measured, is compressed in a cylinder to the desired pressure and maintained at line temperature. A dead-weight tester is used to measure the pressure of the gas in the cylinder. "After a sample of the gas has been collected at high pressure in a steel cylinder of known capacity, successive small portions of the sample are withdrawn into a glass burette where their volumes can be determined at atmospheric pressure. This is continued until the whole sample has been reduced to atmospheric pressure, and the sum of all the volumes at atmospheric pressure is then compared with the volume to which the initial known volume of gas would have expanded if it had been reduced to atmospheric pressure in accordance with Boyle's law." A curve of Z versus pressure can be plotted.

For greater speed and convenience, in our own laboratories, we measure the expanded gas in a very accurate wet-test meter instead of in the burettes. The general procedure is substantially the same as that devised by Bean except that a water vapor

*Presented at Southwestern Gas Measurement Short Course, University of Oklahoma, Norman, Oklahoma, April 22, 1939.

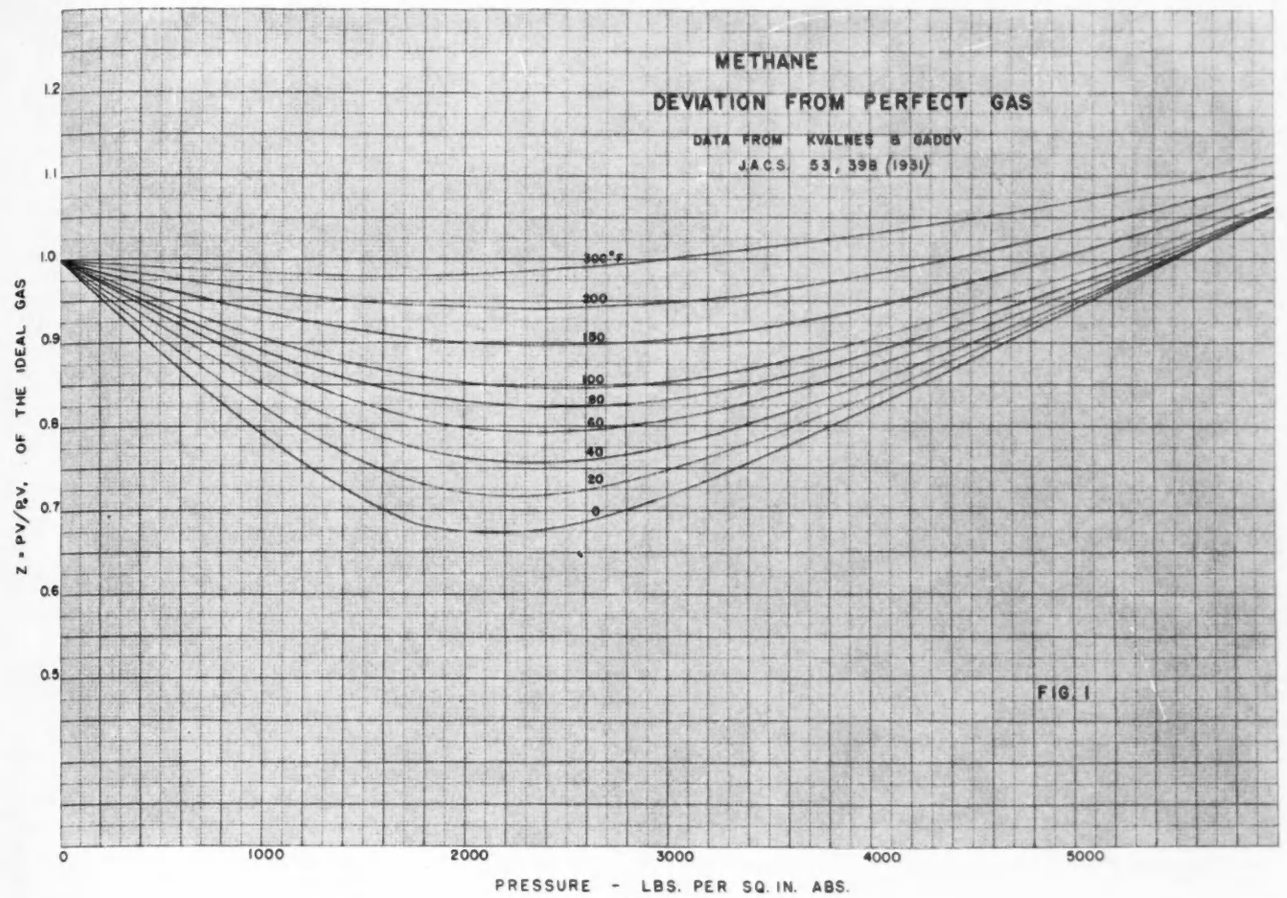


FIGURE 1

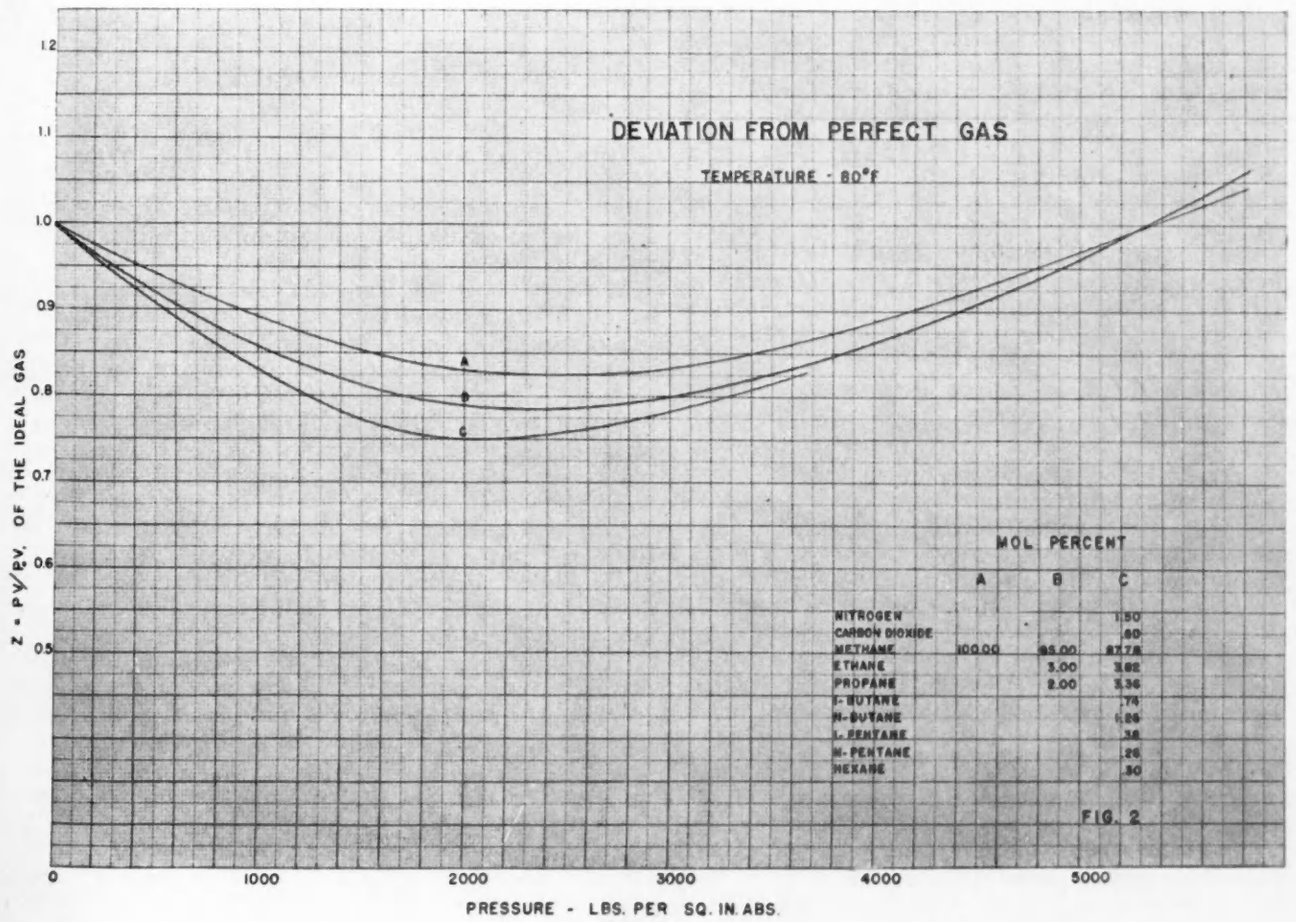


FIGURE 2

pressure correction is necessary. A deviation curve obtained in this manner (Figure 2) is shown on a residue gas of 95 percent methane, 3 percent ethane and 2 percent propane.

W. K. Lewis[2] showed that it was possible to correlate the deviations of pure hydrocarbon gas as functions of reduced temperatures and pressures. Curves of this correlation are published. Kay[9] developed for gaseous hydrocarbon mixtures, a concept of pseudo-critical temperatures and pressures from which, with the generalized correlation of Lewis, it is possible to calculate the deviations of naturally occurring hydrocarbon gases from their analyses. Expansibility factors compiled from these data are good in the absence of exact experimental data and can be used where it is impossible to actually determine the Z versus pressure curves.

Sage and Lacey[3] have determined the compressibility factors Z for a natural gas of the following composition (Figure 2):

Nitrogen	1.50
Carbon Dioxide	.60
Methane	87.78
Ethane	3.82
Propane	3.36
Iso-Butane	.74
N-Butane	1.26
Iso-Pentane	.38
N-Pentane	.26
Hexane	.30
	100.00

The deviation factors for this gas are greater by an appreciable amount than those for pure methane. They are also greater than those for the residue gas which we determined in our laboratory. The difference in factors are thus dependent enough upon the composition of the gas to warrant their experimental determination for the gas in question. This is especially true where very accurate measurement is desired.

The above discussion deals with the measurement of gas by an orifice meter. It might be mentioned at this point that very good results are being obtained in certain places in recycling plants by letting the cylinders of the compressor act as a displacement meter. The particular installation in mind injects dry residue gas back into the formation at a pressure in the neighborhood of 3500 pounds per square inch. Pulsation in the flow line make orifice metering impossible.

An instrument has been placed on the compressor which records the strokes of the cylinders. From shop data, the compressor manufacturer has worked out a displacement volume for the pistons per stroke. Thus, an engine making a given number of strokes or revolutions a day displaces a definite given volume of gas. This gas volume at operating temperatures can be converted to its volume at 60°F. and also to any desired pressure base by suitable super-expansibility factors. In such a case, the Y factor is applied directly to the volume displaced instead of the square root of Y as in orifice meter work.

The gas volume measured in this way has been periodically checked against the metered volume of the compressed gas after it has been expanded to atmospheric pressure, the expansion eliminating all pulsation. So far, the operators are pleased with their results. There is no definite information concerning the actual accuracy of such measurements. This would depend almost entirely on the conditions of the piston rings and cylinder walls of the compressors.

Wet Gas

The problems encountered in measuring wet gas are numerous and in many cases, hard to combat. In 1932, Dr. W. N. Lacey stated that the distillate obtained from a well which is now referred to as a gas-distillate well, might actually be a gas in the reservoir. The large amount of work which has since been carried out substantiates this view, and it is now known that this distillate was originally a part of the gas phase within the reservoir.

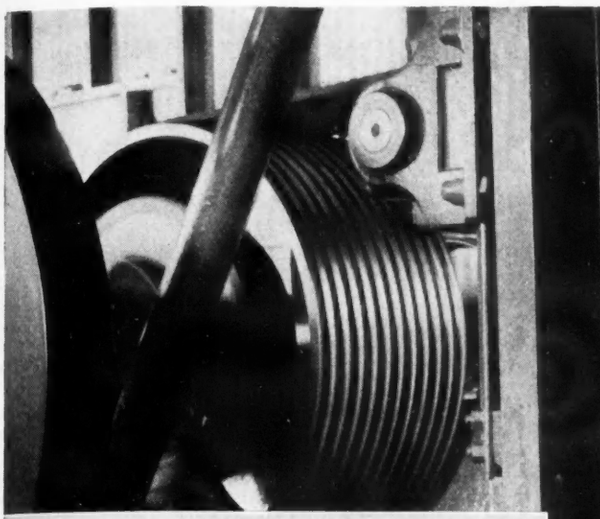
Before discussing the metering of gas from a well of the gas-distillate type, a study of the causes and effects of liquid condensation from the gas will be given.

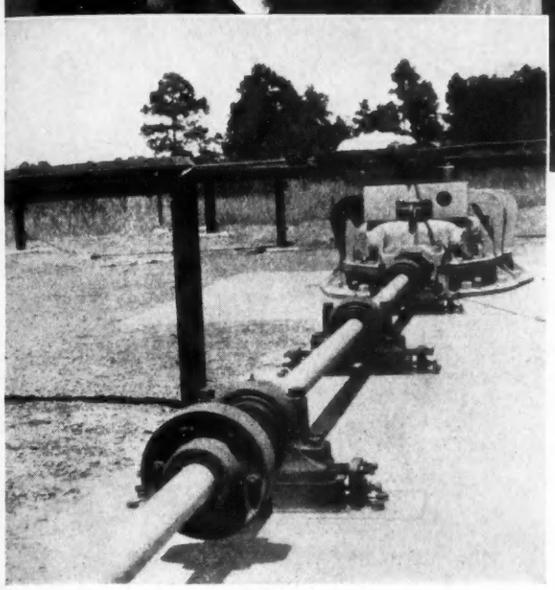
A brief explanation of the phase relations of a sub-surface gas (Figure 3) may aid in understanding the behavior of a gas when subjected to changes in pressure or temperature. This diagram is not exact in its dimensions, but merely shows a general trend toward which naturally occurring hydrocarbon mixtures adhere. Definite experimental curves have been published by Lacey and his co-workers[4] and from his data together with that by Kay[5] and Katz[6] we can arrive at some conclusion as to the shape of the diagrammatical relations of a complex hydrocarbon system. The portion of the curve AC is the boundary between the single phase or liquid region and the two-phase or vapor and liquid region. This line is the vapor pressure or bubble point line. The line CB is the boundary between the same two-phase region of vapor and liqud on the inside and the single phase vapor region on the outside. This line is called the "dew point curve." At the point C, we have the critical point where the properties of the vapor and the liquid become continuously identical, and they cannot be distinguished from each other.

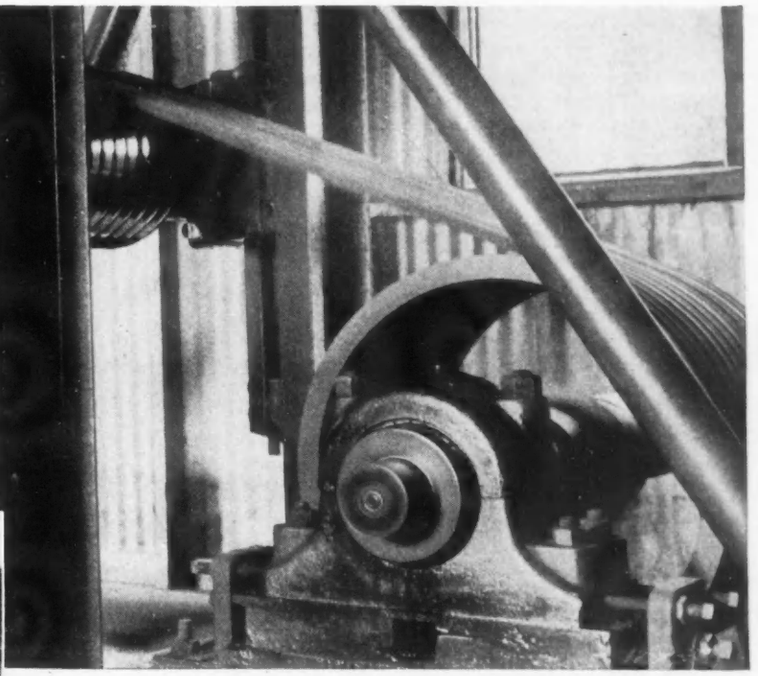
We now have three sections of this diagram: above the line AC is liquid; to the right of C and outside of CB is pure vapor; and, inside the line ACB is a mixture of vapor and liquid. The dotted lines represent the percentage of liquid in the liquid-vapor region.

Wells of the type exemplified by the Texas Panhandle district would have reservoir conditions falling to the lower right of the dew-point curve CB, shown by the point X^1. As can readily be seen, any change in pressure would not affect the phase behavior of this fluid because throughout any pressure range at the given temperature the fluid always remains a gas. Any appreciable temperature reduction would, however, cause the condensation of liquid because the conditions would then fall to the left of the dew-point curve CB and would lie in the two-phase region. Practically all of the recent gas wells in the Texas and Louisiana Gulf Coast produce liquid and are of the type shown by the point X.

We have recently learned that wells of the gas-distillate type contain, in the reservoir, a gas which from subsurface temperature and pressure measurements, is shown by a point X or on the upper portion of the line CB. If the pressure on this gas is allowed to drop, it will cause the condensation of liquid because the pressure will now be at a point P which is in the two-phase region. This condensation of liquid is called retrograde condensation. A reduction of temperature of the gas will also have the same effect because we would drop to a point T which is







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also in the two-phase region. A combination of these two factors, pressure and temperature reduction, results in a condition shown by Y and is therefore to be avoiled in all cases if we expect to have a true gas flowing from the well head.

Of course, it is impossible to flow a well without some reduction of pressure of temperature from that in the subsurface formation and consequently most wells do carry a certain small amount of entrained liquid. The amount of this entrainment which can in some cases cause slugging, will depend upon magnitude of the pressure and temperature reductions.

For this reason, we think it is very advisable to install chokes downstream from the meters. Such a

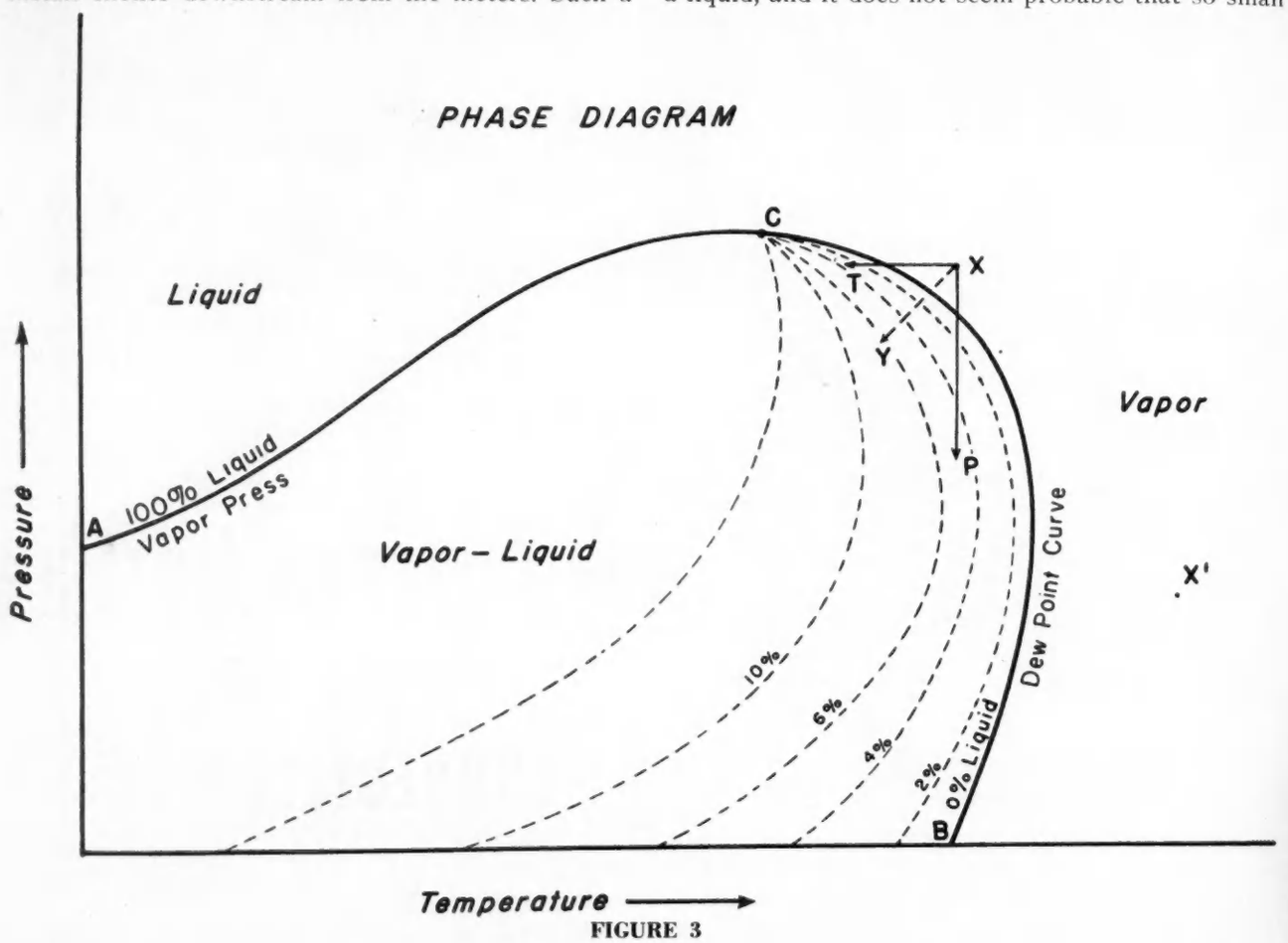

FIGURE 3

procedure will result in a minimum of retrograde condensation and the fluid passing thhrough an orifie will very nearly have the properties of a true gas.

An anlysis of the distillate trapped out of the flow line of a well enables us to calculate the error involved as a result of retrograde condensation.

	Mol. %
Methane	29.50
Ethane	4.33
Propane	5.24
Iso-Butane	2.37
N-Butane	4.05
Iso-Pentane	3.67
N-Pentane	2.44
Hexane	10.22
Heptane +	38.80
	100.00

Assuming that we obtained .2 gallons of liquid of the above composition, we can convert it to actual vapor which would be .56 cubic feet per 100 cubic feet of residual gas. The error thus involved is

$$\frac{100 \times .56}{100.56} = .56\%$$

Such an error could not be considered appreciable.

Whether or not a small amount of liquid entrainment actually interferes with the correct flow of a vapor through an orifice, is a subject for considerable thought. We must, however, keep in mind that at pressures near 3000 pounds per square inch the physical properties of the gas begin to approach those of a liquid, and it does not seem probable that so small a volume of liquid entrainment could appreciably interfere with measurement by the orifice.

If gas from a gas-distillate well is passed into a gravity balance, liquid will condense in the balance and connection lines due to the drop in pressure. The results of any specific gravity balance determi-

FIGURE 4

Separator Pressure—Pounds Per Square Inch	1400 lbs.	2000 lbs.	2400 lbs.
Methane	92.00	91.04	91.02
Ethane	5.87	5.48	5.00
Propane	1.05	1.70	1.70
Iso-Butane	.28	.43	.45
Butane	.29	.48	.53
Iso-Pentane	.10	.17	.30
Pentane	.09	.17	.17
Hexane	.15	.21	.40
Heptane	.17	.32	.43
	100.00	100.00	100.00
Calculated Sp. Gr	.612	.632	.642

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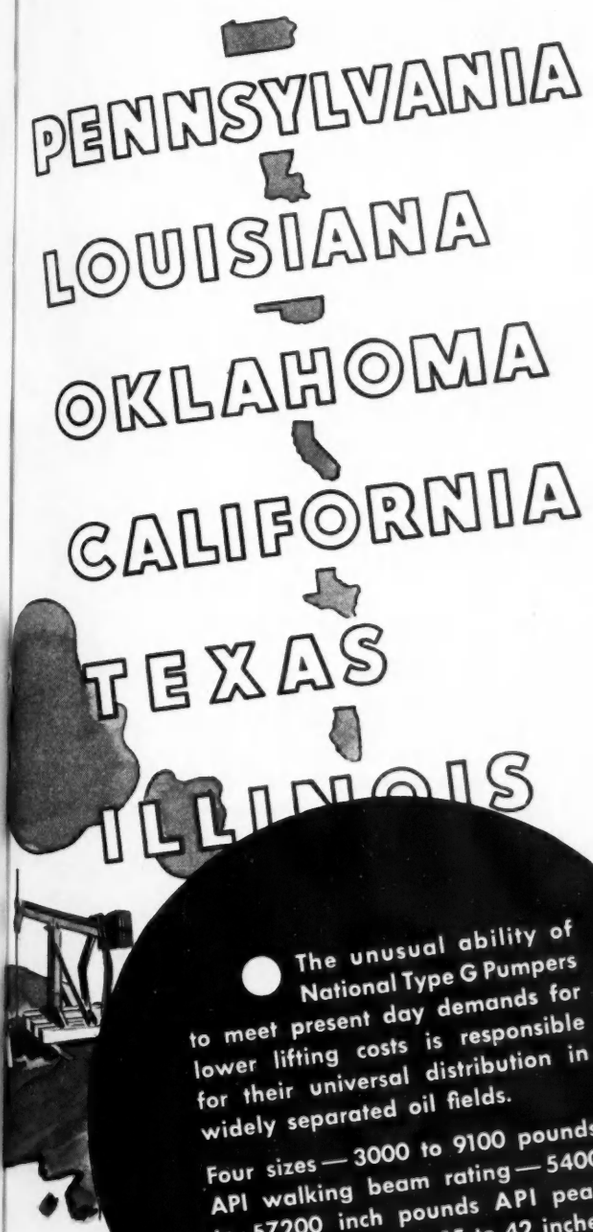

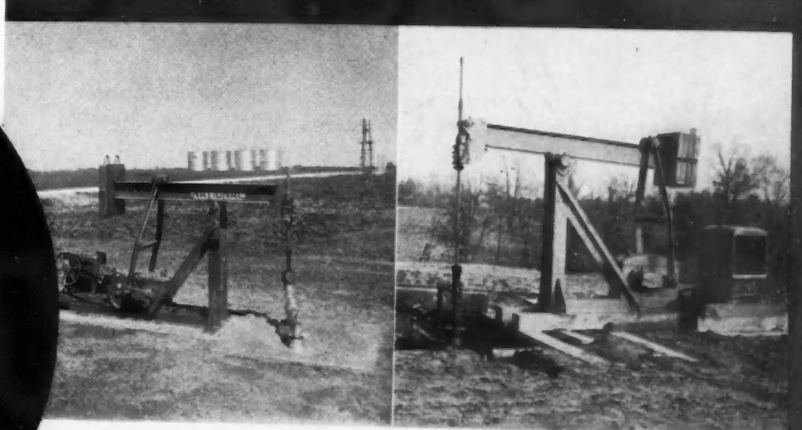

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nation will, therefore, be low, depending upon how much liquid has condensed. An example of such an error is shown by the following. These analyses are of gases from a separator while it was operating at various pressures. The temperature in all three cases was very nearly the same.

The variation shown in the specific gravities of the gas will result in quite a difference in F_g factors in the orifice coefficient. For very accurate measurement, a hydrocarbon analysis of the gas would, perhaps, enable us to calculate the specific gravity to a greater degree of accuracy than could be determined in the balance.

The same errors are involved in determining the expansibility factor for a gas of this type. Liquid will condense in both the high-pressure cylinder and in the burette as the gas is expanded for measurement. A little different method can be used here for arriving at an F_{pv} factor.

If we obtain a sample of gas in a cylinder of known weight and volume at flowing conditions of temperature and pressure, we can weigh this sample and determine its density. Since a gas which is compressed has a higher density than that calculated from Boyle's law, we can compare this density with the density of the gas at atmospheric pressure and determine the super-compressibility factor (Z), but the density of the gas at atmospheric pressure must be calculated from a hydrocarbon analysis of the high pressure gas.

$$Z = \frac{\text{Density Calculated from Analysis}}{\text{Actual Determined Density}}$$

Then, again we can apply the correction factor as before, where

$$F_{pv} = \sqrt{Y} = \sqrt{\frac{1}{Z}}$$

The determination of the F_{pv} factor and also the F_g factor by this method, involves a hydrocarbon analysis together with a density determination. Both the equipment and time consumed are expensive. Where an operator is buying gas from a lease, laboratory expenditure for these determinations could actually amount to more than the gas is worth. For this reason, in such cases, the economics of such precision should be considered carefully and the procedures adopted should be agreed upon by contract. The parties concerned could determine the probable magnitude of all errors and decide upon some desirable optimum precision.

In studying the behavior of a complex hydrocarbon mixture from the phase diagram, we readily agree that for proper measurement only those pressure drops over which we have no control, are to be tolerated. For that reason we should install chokes for pressure regulation on the downstream side of the orifice meters.

In some locations, it is desirable to use subsurface chokes down inside of the tubing. Any cooling effect which would cause freezing is thus taken care of by the high formation temperatures. Heaters in the flow line are in this way eliminated unless the pipe after leaving the well head is exposed to low atmospheric temperatures. Subsurface chokes can be installed or removed by the use of a special tool fastened to the end of a wire line which is lowered down through the Christmas tree.

Surface chokes are either of the positive or adjustable type. A positive choke is nothing more than a smoothly bored nipple of a definite inside diameter. They are placed right in the flow line from the well and are easily removed or replaced. An adjustable choke is a very large needle valve with a lock nut for holding it to a definite opening. This type of choke is very well suited to regulate a flow of gas which will be variable.

It is good practice to have one choke, either a positive or adjustable, right at the Christmas tree and another downstream from the meter. The first choke is a safety precaution and is of sufficient size to cause no pressure or temperature drop at the desirable flow rates but would keep the well from flowing wide open in case of a break somewhere in the flow line away from the well. The second choke then serves to regulate the actual flow of gas from the well. It may or may not be necessary to install a heater, depending upon how large a pressure drop is allowed on the gas.

Curves showing the resultant refrigeration effect due to pressure reduction of a gas are available. They have been compiled from actual experimental data and serve very well in determining whether or not heaters are necessary. They can also be used to estimate the size of heater necessary.

Meter Installations

The meter installations for dry gas are of the conventional type. In only a few cases where extreme weather conditions prevail, hydrate freezing is experienced but this can usually be eliminated by seal pots filled with either water anti-freeze solutions, or water glycerine solutions. The latter seems to work well where rather sudden pressure changes might blow the liquid from the seal, the only advantage being in an increased viscosity of the sealing liquid.

Where a gas carries only a small volume of entrained liquid and is warm enough to prevent freezing, we have installed small traps in the meter connections. These traps contain no sealing liquid and serve only to catch entrainment and keep it out of the mercury chambers of the meter. If a gas carries a considerable volume of entrained liquid, the meter installations are more complicated. Traps of sufficient size to catch all of the entrainment would be too large. Seal pots are thus installed to keep the distillate and salt water out of the mercury chambers. These pots are filled with some suitable fluid.

A drawing of a meter installation for such a condition is shown in Figure 5. The seal pots should be of such size that the sealing liquid level will not vary more than ¼-inch. Connections should be of ½-inch pipe. Horiztonal pots seem to hold the sealing fluid better because the up-and-down movement is less for a given pressure change across the orifice. Wells which slug liquid material cause sudden pressure changes and large horizontal pots seem to be the best solution for this problem.

On several of our wells, we have built small houses which extend down to the ground, completely surrounding the meters, harness and flow line. Freezing trouble was experienced previous to the housing, and by the use of the house, we were able to eliminate seal pots. Traps to catch entrained liquid were all that was necessary.

In measuring wet gas around 2500-3000 pounds per square inch, temperatures of less than 70-75° F.

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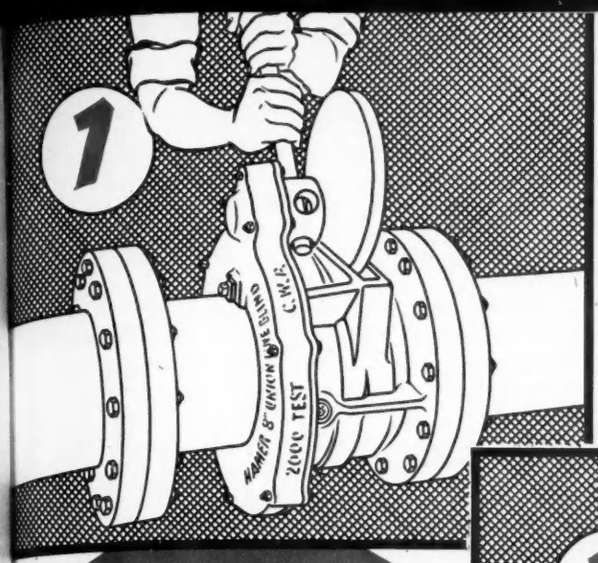
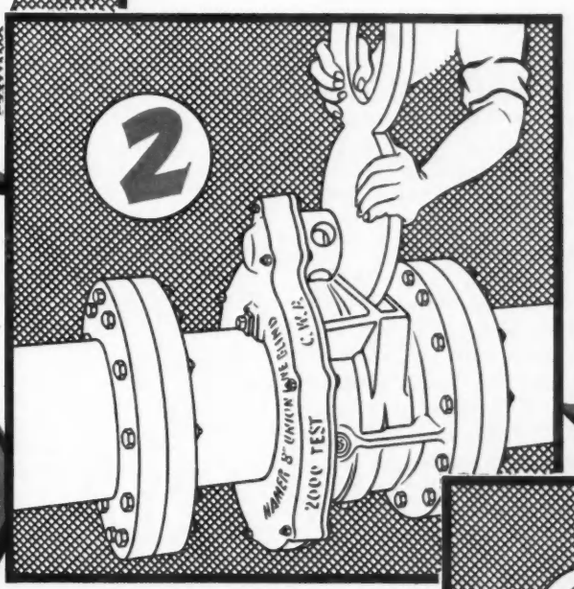
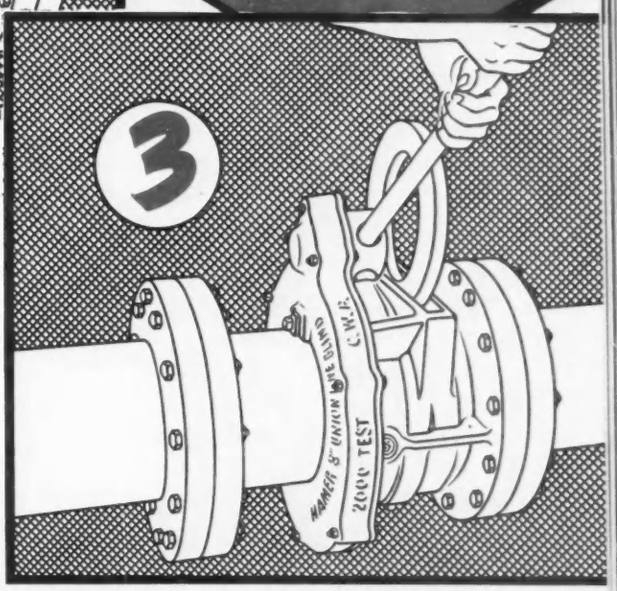


1. With a short bar, turn the gear head to the left. This releases the plate by moving the inner sub in the body. (Equivalent to spreading the flanges in the old way—buts lots easier and quicker.)



2. Lift the plate out of the body, reverse it, and drop it back into place. You'll hear it hit bottom as it seats. Proper location is assured.

3. Just turn the gear head to the right and you have a positive shut-off. One man can change the Hamer Union Line Blind from an open to a closed position in ONE MINUTE—OR LESS.



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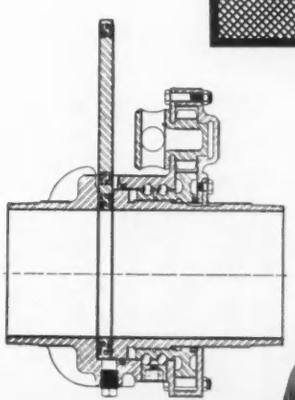

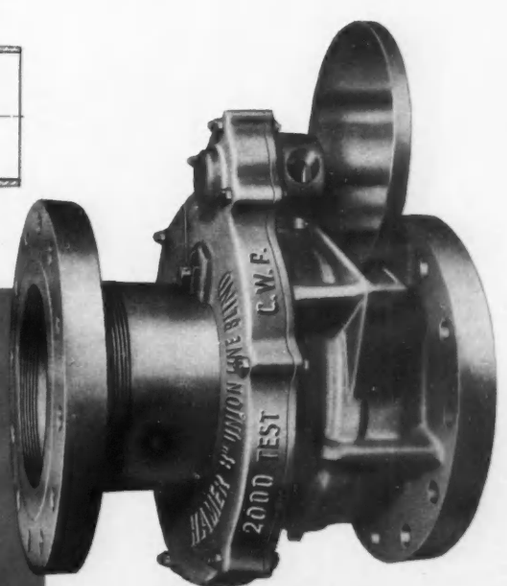

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cause trouble. It is rather difficult to determine the exact point from curves of the type published by Hammerschmidt[7] and by Deaton and Frost[8], the pressure range of these curves being too low. Liquid entrainment, both distillate and salt water, render it difficult to determine the exact point of hydrate formation. Again, it should be mentioned that the best way of eliminating hydrate formation is to eliminate choking between the well head and the meter and thus utilize the heat of the formation. In all of our installations, we utilize vertical runs with the necessary length of straight pipe above the orifice flange. This pipe contains straightening vanes meeting the A.G.A. requirements in Gas Measurement Committee Report No. 2. The greatest dimension (d) of the inside cross-section of the passage through the vanes shall not exceed one fourth the inside diameter (D) of the pipe. The length of the vanes shall be at least ten times the dimension (d). Whether or not these sized vanes are best suited for gas measurement in the presence of liquid is not for us to say. If any experimental work is carried out where the actual impingement of the liquid particles against the orifice could be seen, a different type or sized set of vanes might be recommended. We have done no work on this subject and can, at this time only refer to the above specified vanes. These vanes will not only serve in assuring viscous flow of the gas as it approaches the orifice, but also would disperse entrained liquid and cause it to impinge upon the orifice in a finely divided state. We feel that the harmful result of entrained liquid is minimized by these vanes.

In vertical meter runs, all liquid will pass the orifice and be carried on through the line. A procedure similar to that employed in wet-steam measurement might yield satisfactory results in horizontal runs. A weep hole at the base of the orifice plate permits the passage of the liquid without allowing it to build up in the line above the plate. The selection of the proper size weep hole, however, is somewhat of a problem in this type of meter run. If the weep hole is too large, enough gas could possibly pass through it to result in an overall error of measurement greater than by eliminating the weep hole. On the other hand, if the weep hole is too small, liquid will bank up against the orifice plate. Vertical meter runs, therefore, seem almost the only solution.

Special emphasis should be placed upon the importance of having a leak-proof system in the meter connections. Any leak, however slight, results in the formation of ice. The constant freezing and thawing can change the differential on the meter reading. This is especially true with respect to the packing gland around the pen arm shaft.

The authors wish to express their appreciation to Mr. A. F. Benson of American Meter Company and to Mr. S. E. Buckley of Humble Oil & Refining Company for their helpful suggestions and to the Humble Oil & Refining Company for permission to publish this paper.

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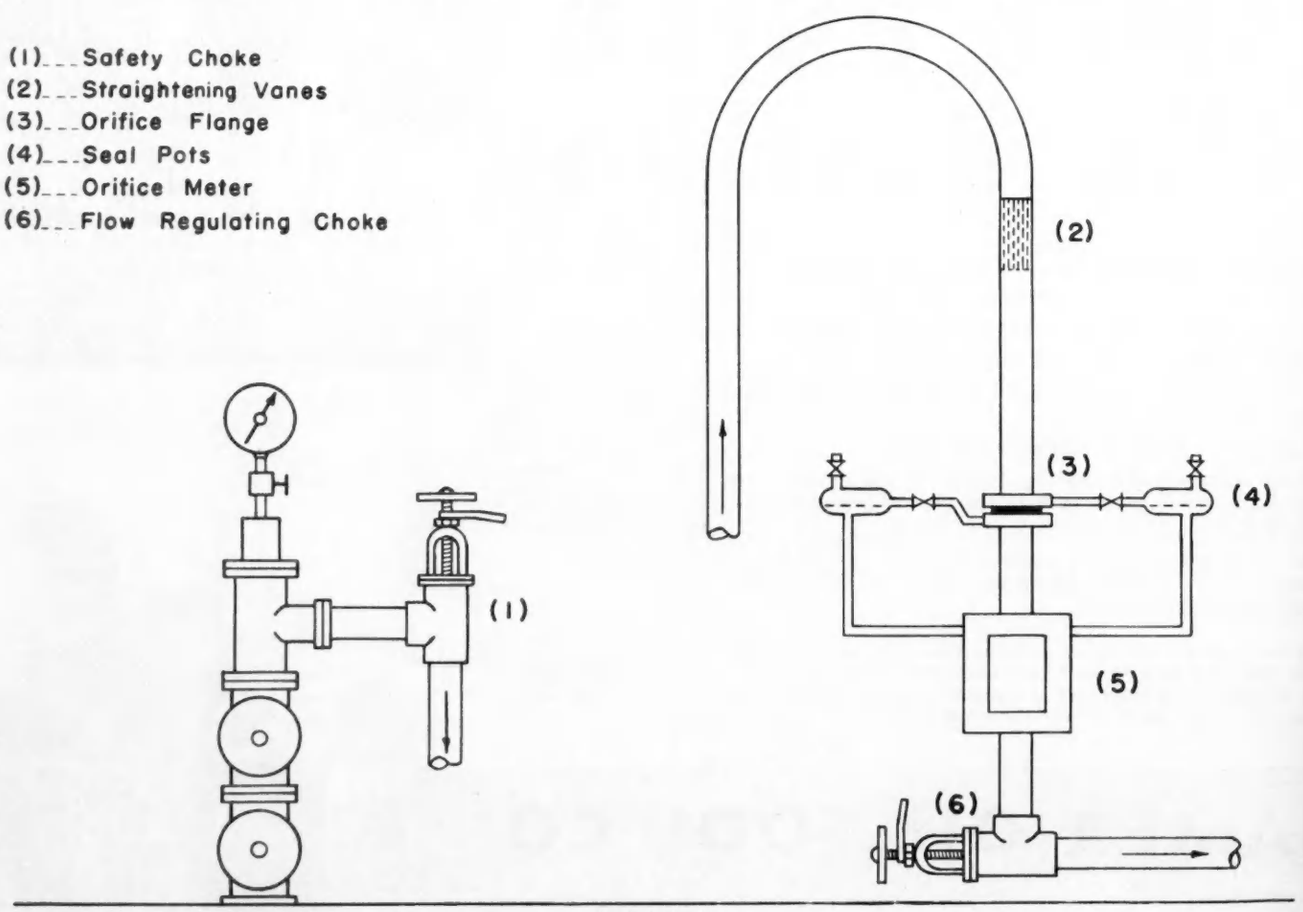

FIGURE 5

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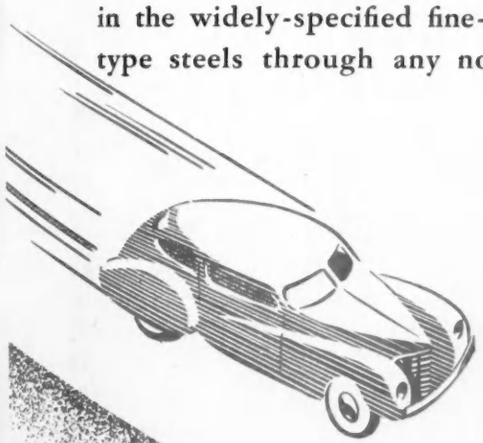

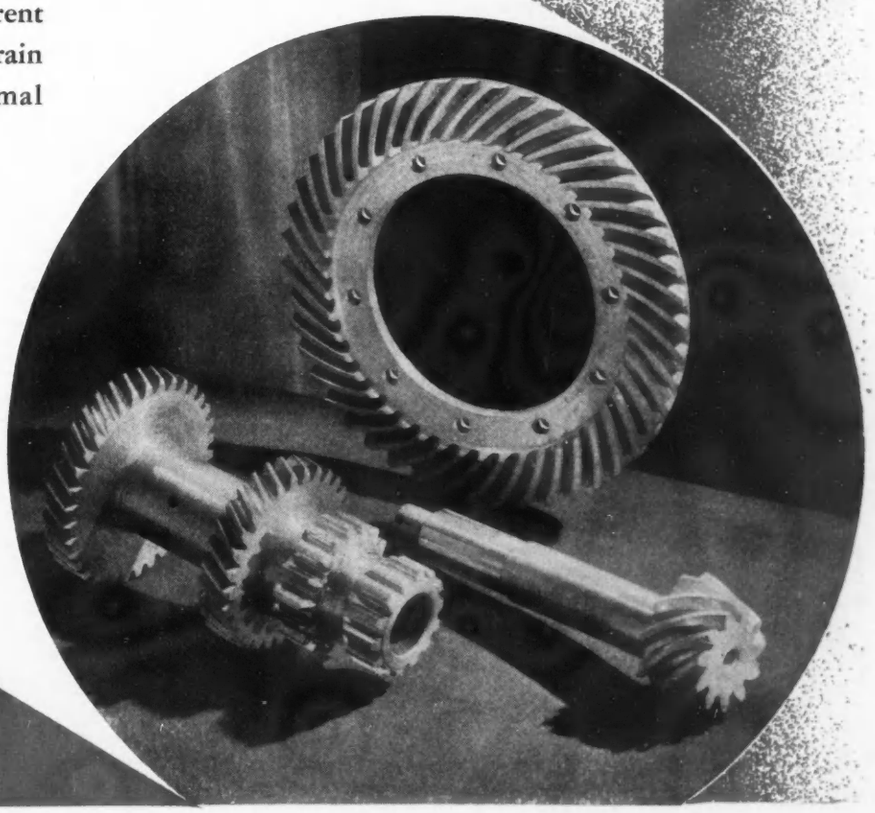

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Applying High Explosives in Completing Oil Wells

Nitroglycerin shooting, an inexact science, leaves operators in dark as to what will result; much scientific research needed.

By BEN ALTMAN, Staff Writer

OF all the various methods used in completing wells, shooting remains the most difficult to comprehend. This is due to the fact that other completion methods can reproduce at the surface to a large extent the actual underground conditions existing at the time, whereas in shooting, the physical condition of the producing horizon cannot be visualized, or even as yet analyzed.

Characteristics of Nitroglycerin

Nitroglycerin, $C_3H_5(NO_3)_3$ is a heavy, viscous, oily liquid obtained by treating glycerin with a mixture of three parts nitric and five parts sulphuric acid, its viscosity being two and one-half times that of water. The color varies from white to straw and has a specific gravity of 1.6 at 60° F. The nitroglycerin used in shooting wells will not freeze as ethylene glycol, a polydroxy alcohol, is added to the glycerin, although at temperatures in excess of 150° F. detonation may result spontaneously within 18 to 24 hours due to decomposition. Although nitroglycerin is very sensitive to heating, friction and shock, it necessitates a high initial impulse to develop propagation of the explosion. A bomb initiates the explosion, the explosive being in the lower part of the bomb, and priming is accomplished by means of a blasting cap inserted into the explosive.

Nitroglycerin is composed of nitrogen, oxygen, carbon and hydrogen and in such proportions as to include an excess of oxygen which may result in decomposition at high temperatures. At the instant of explosion one pound of liquid nitroglycerin yields 156.7 cubic feet of gases, the gases evolving at the rate of 23,600 feet per second at a temperature of 6280° F. The process of making the explosive today consists of adding glycerin, with constant cooling, to a nitric-sulphuric acid mixture, the sulphuric acid being used as a dedydrater to prevent the dilution of nitric acid with the water formed in the reaction as well as controlling the temperature.

Three Types

The three types of explosives at this time being used in shooting wells are: blasting gelatin, commonly known under the name "solidified nitroglycerin," liquid nitroglycerin and gelatin dynamite. Gelatin dynamite is now being used also in seismograph shooting since the extra energy of blasting gelatin is not necessary. Straight dynamite is not suitable for oil well shooting as it contains solubles which may be leached out by water, which then makes it ineffective and somewhat dangerous.

Reasons for Shooting

Relative to flow of fluid through porous media, the shot may be expected to affect the permeability of the formation and the size of the hole. Fracturing can produce a change in the drainage system in opening new channels of flow in porous media of a non-homogeneous nature, assuming of course that the shot does fracture the formation. Shooting can be beneficial in cleaning the face of old pumping wells by removing accumulations, salt incrustation as well as paraffin deposits. Other applications of shooting consist of straightening of crooked holes, blasting out obstructions which may impede drilling or running casing, sidetracking parted casing or lost tools, but principally the well is shot to increase the ultimate production or as a final effort before abandoning. In order to accomplish any of the above stated results, it is evident, considering the relatively small space available in the well, that a potent and shattering explosive must be used.

Concentration Versus Overburden

Results which the early shooter had at his disposal were those obtained by his knowledge of underground shooting in mines and explosives used in quarrying. However, shooting in quarries and in oil wells can hardly be compared, since different structural relations exist. High temperatures and pressures are encountered in wells and the mechanics of placing the shot are entirely of a different nature.

One method designs the shot to lift the overburden, giving consideration to the relative frangibility and elasticity of the rock which is to be shot and thus providing an efficiency factor. The other method places the concentra-

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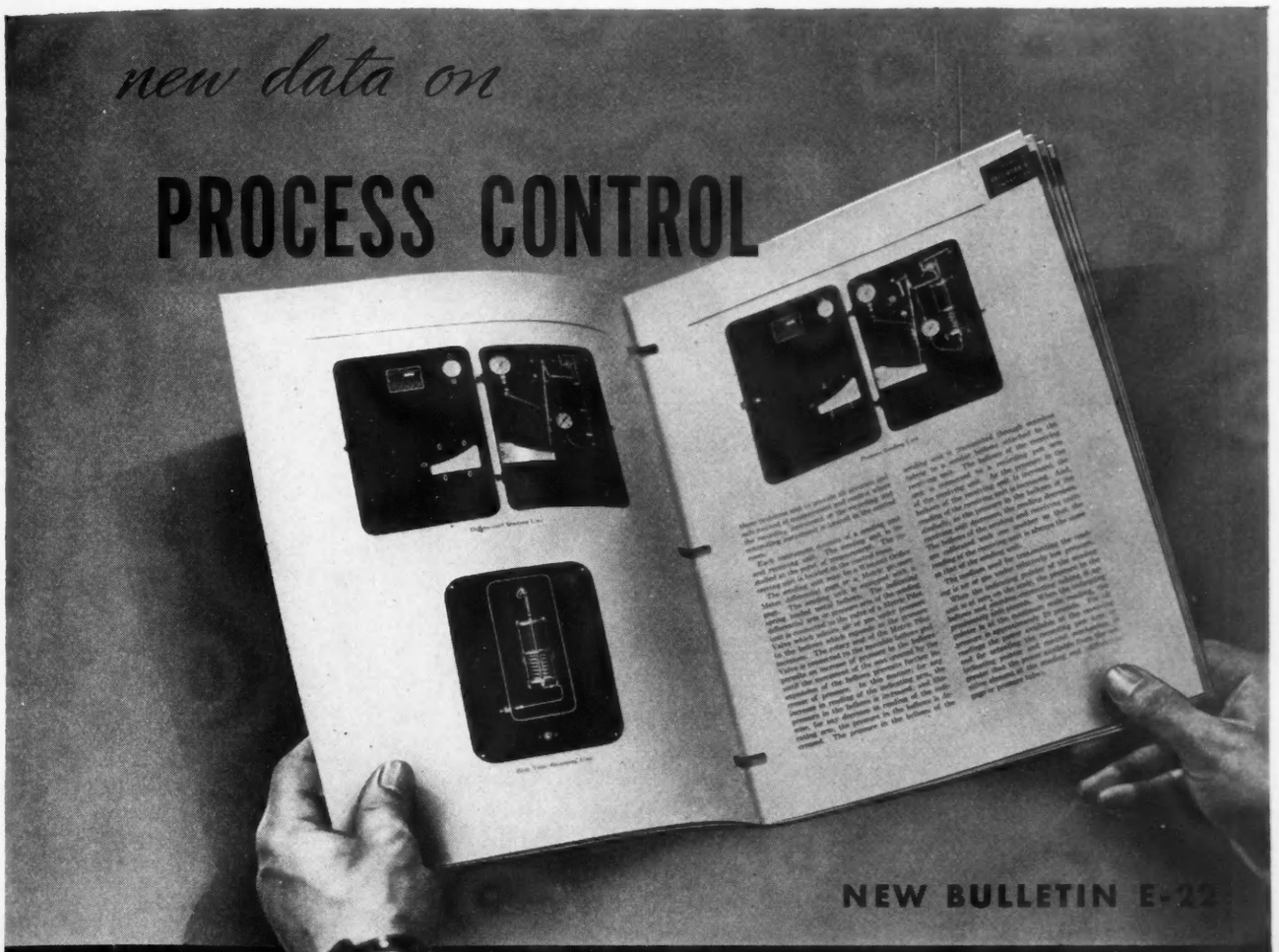

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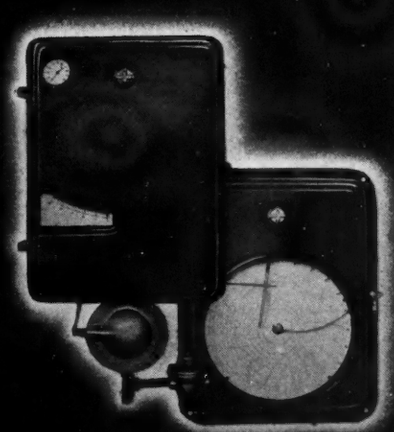

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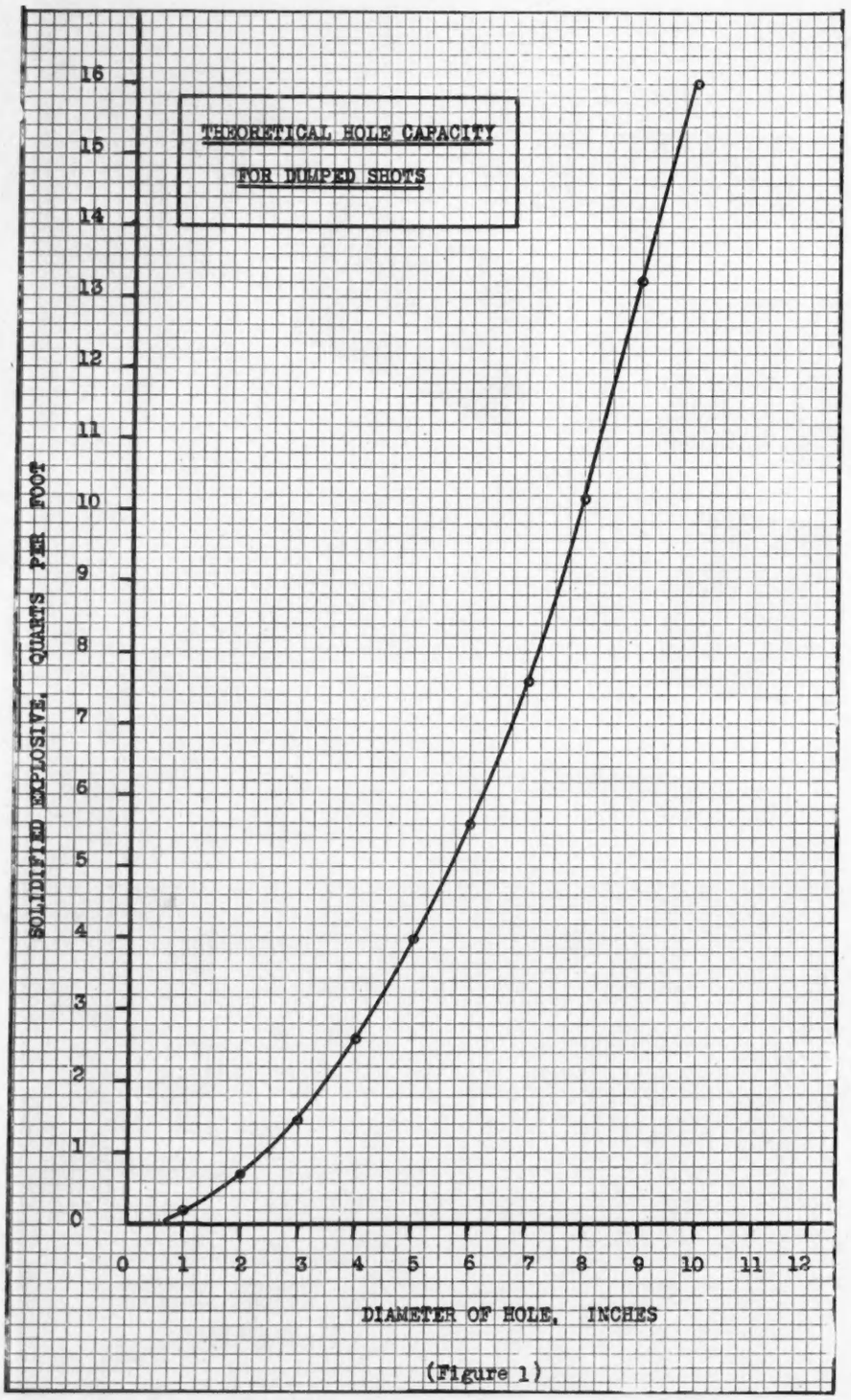


(Figure 1)

Chart at left shows how amount of solidified explosive to be put in a hole of given diameter is calculated.

tion of the shot as more important in the design, then the total explosive becomes a function of the length of the shot to be considered in terms of total energy and thickness of the producing formation, as well as the position of the explosive with respect to the producing formation.

The dump shot is used where the operator desires to shoot with as much nitroglycerin as the hole through the producing formation will hold and where the formation is extremely hard. This type shot has the disadvantage that the explosive (if liquid) may migrate from the hole and enter void spaces of the formation which may not be detonated and subsequently gain entrance to the well, causing damage to casing, pumping equipment or surface equipment, such as tank batteries, etc. Solidified nitroglycerin should always be used in the dump shot.

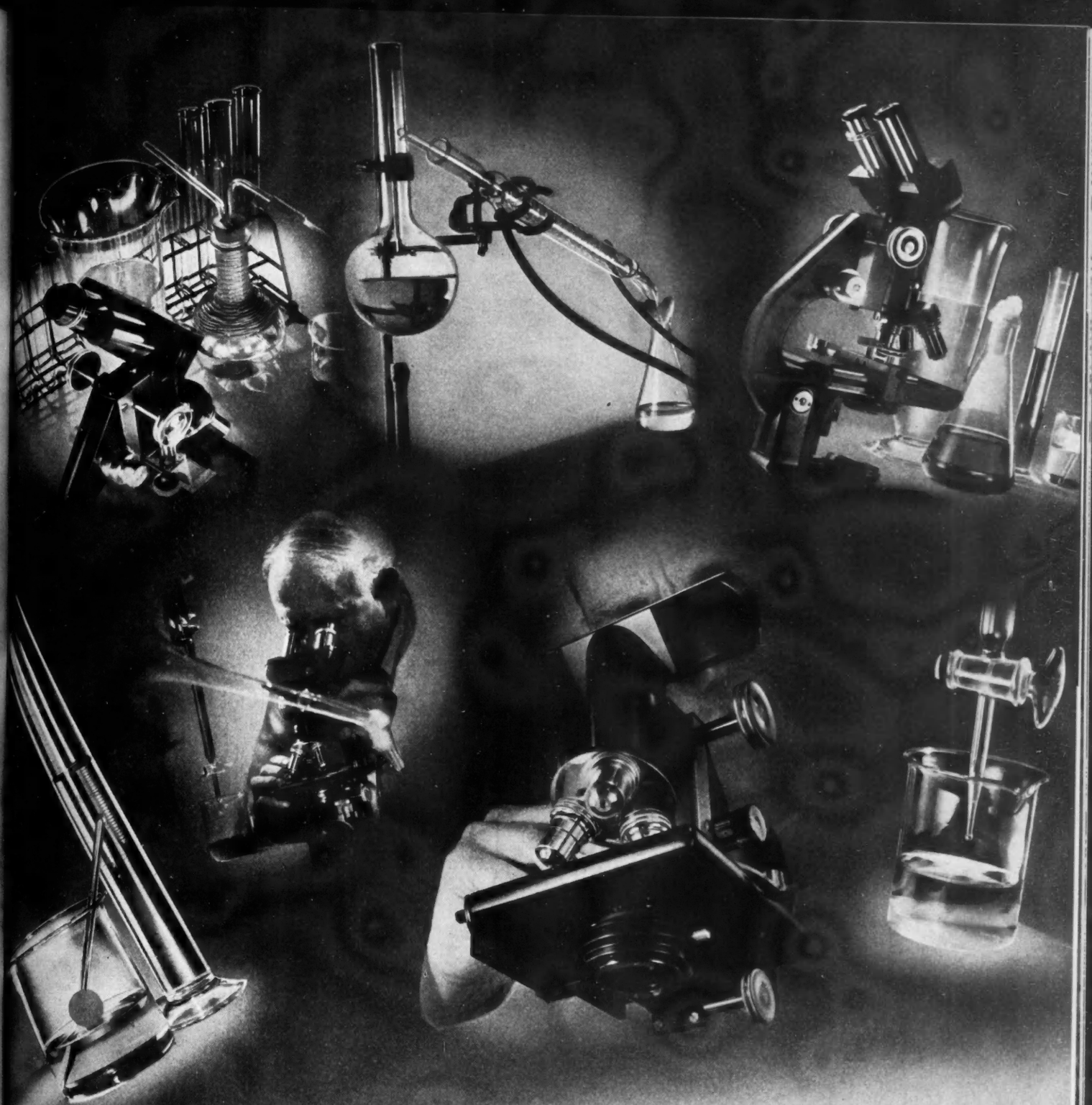
Concentration is of primary importance in shot design. A procedure in use in estimating a concentration is to make the concentration proportional to the elasticity of the rock and inversely proportional to frangibility.

In one instance it may be desirable to design the shot to open new channels in limestone, and through experience it has been found that the highest concentration will usually give the best results. In a new well the first shot should be the greatest with subsequent shooting designed only to reaccomplish in some degree the effect of the first shot, stimulating flow again. The only exception to this would be in case the first shot was not effective. Then the second shot would be stronger to correct for the first one. Two important items to consider in designing a shot are the initial cost and clean-out job necessary after any type of shot has been fired.

Figure 1 gives the theoretical capacity of the hole for the placement of dumped shots, using solidified explosive. For concentrations of 1.5 quarts per foot or greater, solidified nitroglycerin is practical.

Liquid and Solid Stemming

The type of producing formation, the total energy, or the size of the shot should ultimately determine the type of stemming to be used. Other things to be noted are the casing weight, type, amount of cement behind the casing and the distance between the casing shoe and the top of the explosive. Among the advantages of solid stemming over liquid stemming are that solid stemming will confine the reservoir energy to a greater extent, increase the size of the shot hole and reduce the number of casing failures. Sand, gravel and chert are the most commonly used



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stemming agents, with some operators using cement confined with a sand buffer below and above the cement. In some cases this method of using cement for stemming has decreased clean-out jobs and in others it has greatly increased the time and cost of clean-out jobs. If pea gravel is used above the cement, the cement may migrate up and harden the gravel by cementing the particles together and necessitate drilling to clean out the hole. Had gravel alone been used it could have been pumped out.

Sand tamped shots require extra expense for labor as well as for the time bomb, but have proved to be more efficient than liquid stemming. If liquid stemming is used, preference of oil over water is noted as oil has the tendency to absorb the shock of the explosion. Gas confined in the oil will compress, whereas water will have a hammer effect, being incompressible and having a greater density than oil. In any event the hole should be filled to overflowing.

Since liquids are effective vibration carriers and if the liquid is once stopped in the hole, this disruptive vibration is transmitted outward, resulting in the collapse of the casing.

The object of stemming or tamping is to confine the explosive and cause an appreciable amount of the force of explosion to be directed laterally instead of upward.

The effect produced by the shot varies greatly, but the size of the shot hole will depend mainly upon the strength characteristics of the rock formation and the type stemming employed.

Figure 2 illustrates the long slender type of cavity such as may be expected to result from a liquid tamped shot. The dotted line above the pay indicates what may happen if the wall of the hole has caving tendencies.

Figure 3 illustrates the pear-shaped cavity which results from surface experiments, making it reasonable (and has been proved in many wells that have been shot) to assume that comparable results may be expected in deep well shooting. It may also be reasonably assumed with that type of shot that the stratum will be fractured over a wider radius.

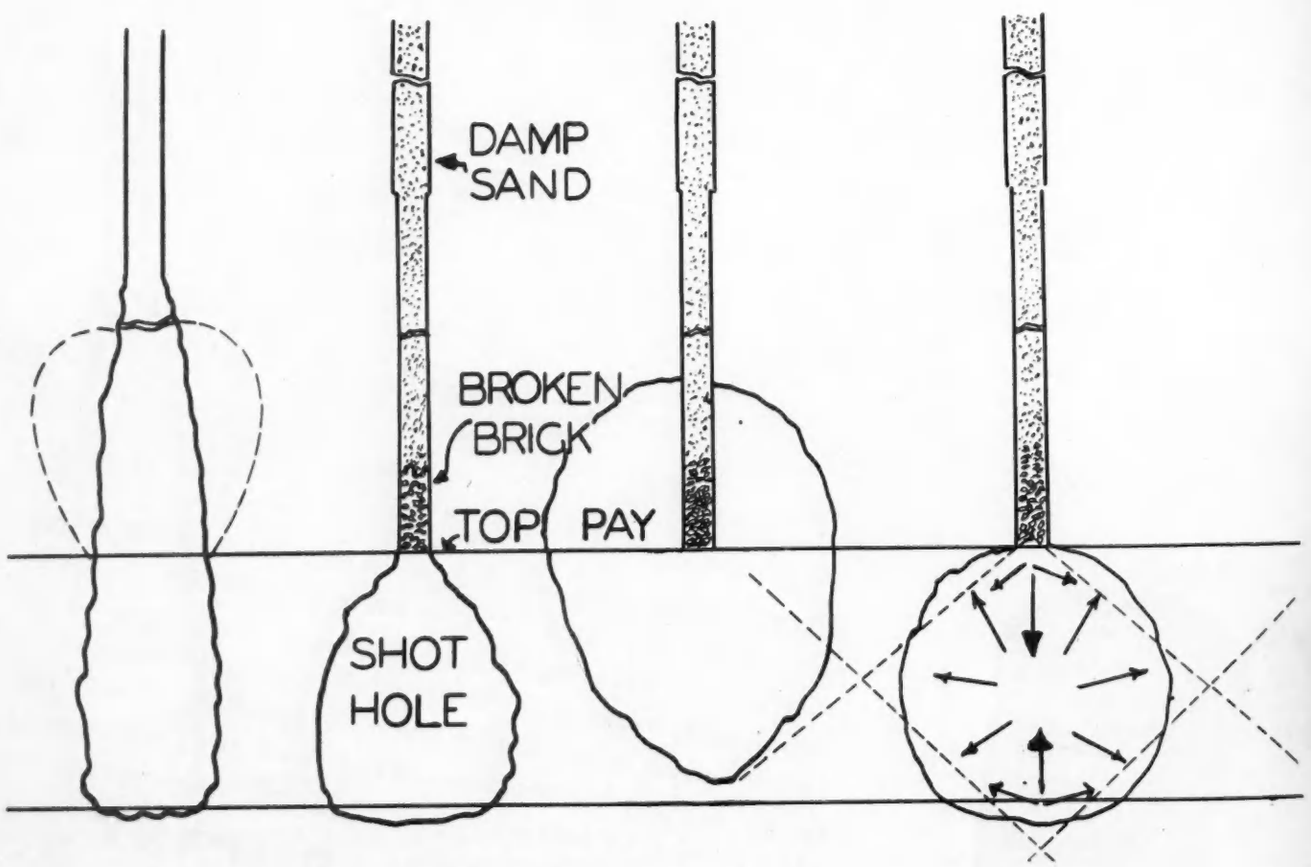
Figure 4 illustrates an inverted pear-shaped cavity which may be expected if the bomb were fired from the bottom of the producing formation. However, usual procedure is to fire from the top of the formation.

There is probably some cracking and shattering of the reservoir rock for an undetermined distance back from the walls of the hole, but the greatest expenditure of energy is upward at approximately 45° angles.

Figure 5 gives a theoretical picture of the shot hole which might be expected by firing the bomb just below the center of the producing formation and which should result in a wave action of greatest carry-

Reference: Figures 2 and 3 from, "Oil Well Shooting, Theory and Practice," by Paul F. Lewis.

FIG. 2 FIG. 3 FIG. 4 FIG. 5



Different shapes of cavities which may be obtained from various types of shots, viz: Figure 2, result of a liquid tamped shot; Figure 3, the pear-shaped cavity; Figure 4, cavity resulting when bomb is fired from bottom of producing horizon; Figure 5, theoretical picture of cavity when bomb is fired just below center of producing horizon.

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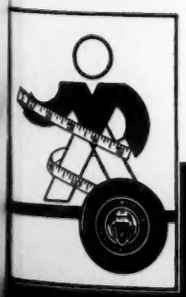

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ing capacity as well as greatest fracturing, depending upon the type of formation. The secondary energy waves are represented by arrows for their direction. This type detonation has not been accepted in field use and cannot be recommended other than for experimental use. From experience and from measurement in practice it is known that progressive hole enlargement occurs in the direction of detonation.

Solid stemming should always be placed on a bridge, usually made of broken brick, directly above an umbrella bridge. This brick bridge will serve a double purpose in providing a solid structure on which to dump the bailer without any danger of exploding the shot below and prevent motion downward which allows the proper setting of the cement. If this brick bridge is well constructed, it will aid in confining the energy of the explosion.

Placement of Shot

In placing the explosive, solidified or liquid, in the hole, tin shells have been used frequently. They are either water-jacketed or single. There is a tendency now to use bakelite composition shells for liquid explosive, which lowers the hazard of bridging. All shells for liquid explosive should always be thoroughly tested for leaks by filling with water before liquid explosive is to be run. Liquid or solidified explosive may be run in shells other than the metal type, provided these shells are properly tested for leaks when using liquid explosive.

Before lowering any type explosive into a hole, the hole should be thoroughly cleaned out to remove any cavings which might obscure the producing formation. That is, all loose material and cavings should be removed from the walls of the entire hole. The fluid level should be determined. Or, if water and oil are both in the hole, the oil/water contact should be determined, since unhooking of the shell is more likely to take place at this critical point than at any other depth. If the fluid is dead, it should be bailed out or lowered to the casing seat and later, after the shot is run, the fluid can be returned if fluid stemming is to be used. If the fluid level on the contrary continues to rise, it should be lowered with relation to time and safety, always allowing a factor of safety in the time element.

Preparing for Shooting

In preparing a well for shooting the shooter should be given ample time to gather his equipment and personnel and survey the hole to see that it is in order for shooting. All the stemming material and bridging should be at the location before the shot is placed, since plans may be altered because of irregularities in the size of the hole or unexpected equipment failures.

The shooter should be notified as to the type and number of time bombs and shells required. Bottom hole temperature should be noted before running the shell. Pre-detonations have occurred in many instances when the bottom hole temperature exceeded 140° F. The best precaution to take when high bottom hole temperatures are encountered is to use solidified nitroglycerin and run it with the least possible delay. Mechanically timed duplex bombs have been found to be satisfactory under most shooting conditions and should be used when solid stemming is the agent confining the energy. Improvements in the electric bomb have made its use more adaptable under varying conditions of oil well shooting.

A complete and accurate record of the shooting is made and can be attached to the well log for future reference. If the well be shot a second time, this record should be available.

When liquid stemming is used the well should be filled to overflowing. When solid stemming is used the exact amount will depend upon the stemming itself as to weight and composition, construction of the brick bridge, weight, kind and size of casing, total depth of the well and size of the shot. For shots larger than 300 quarts, the use of one foot of stemming (gravel) per quart of explosive has been found to give satisfactory results. Two corrections should be made as to the amount of stemming required—one when using welded casing since the thickness and condition of the pipe wall must be brought into consideration. Another correction should be made for depth, since solid stemming must be varied in some inverse ratio to depth. The greater the depth the less correction will be required.

Collapse of Casing

Casing collapse will depend to a large degree upon the size, kind and condition of the pipe. A pressure differential may be set up due to fluid inside and outside of the pipe causing collapse. Vibrations transmitted by liquid stemming as previously discussed have resulted in many failures. Collapse of casing may be due to placing the shot too near the casing shoe or to using too much explosive when fluid stemming is used. But under ordinary conditions collapse of casing should not necessarily depend upon the nearness to the casing shoe, but, for a given casing, more upon the depth of the shot below the surface as well as the size of the shot.

In conclusion it can be said that only scientific research, together with shooting experiences accurately compiled and analyzed, will ultimately explain the phenomena of oil well shooting, an inexact science of today. Experimenting is now under way by an Eastern university, which is working in conjunction with an explosive manufacturing company.

Time Switches Factor in Reducing Lifting Costs

By W. C. LANE, Electrical Engineer

Pumping Series Article No. 6

These simple, inexpensive switches may be used advantageously for automatic starting and stopping of pumping operations at regular intervals.

UNDER conditions now existing in the oil industry it is necessary for operators to take advantage of as many avenues for lowering lifting costs as possible. Sometimes a very simple contrivance will enable one to affect savings much out of proportion to the investment involved. One such device available for those who are using electrical energy for pumping is the time switch. Simple and inexpensive though it is, it may be used to advantage by both purchasers of power and those who generate their own electricity.

Switches of this kind have been in use for turning on and off lighting circuits for a long time, but it is only in the last 12 or 15 years that they have been used extensively for the starting and stopping of pumping wells. As far as the writer is able to determine The Midwest Refining Company was first to make use of them in large numbers. At the time the idea was conceived no switches suitable for the work were available, and after experimenting for a time with spring wound clocks that type was abandoned, and a switch was designed in the company's shop that is a counterpart of those now sold by several manufacturers.

The modern squirrel-cage type motor equipped with a magnetic control is started by pressing one button and stopped by touching another. The time switch is merely an automatic device for performing these operations at certain regularly recurring intervals. It is operated by a motor so tiny that it consumes only two watts of power. The running and down periods may be made practically any length the operator may desire. For example a light well may be pumped for an hour and fifteen minutes and stopped for two hours and forty five minutes throughout the day.

Switches of this type may be used to advantage on stripper wells and on others subject to proration restrictions of such a nature that it is unnecessary to run them the entire 24 hours in the day in order to obtain their allowables. Not infrequently it will be found that the production of wells of the former type may be increased a worth while amount by operating them for short periods throughout the day instead of in one period of an equivalent operating time. There is always some variation in the length of time a manually operated well is pumped, for a workman having a number of wells to supervise is not always able to keep up with his schedule. Sometimes the failure to stop a well before it pumps off results in burning out a set of cups and a rod pulling job.

In addition to doing a more accurate job of operating a group of wells according to a fixed schedule, a time switch enables a man to supervise a much larger group of wells. In one case in mind on a lease referred to by the workmen as a dry farm by reason of it's small production, one man was able to do the work formerly done by two after automatic pumping was inaugurated.

Before equipping a well with a switch, care must be exercised in counterbalancing it so that it will start promptly, without assistance when the button is touched. In many cases industrial type motors have ample starting torque but it is always safer to use a high torque motor on work of this kind. The so-called "high slip" motor is ideal for this service as it has a high torque characteristic. The double cage motor may be used by those who do not subscribe to the theory that the last mentioned type has superior advantages. Slip ring motors may be used but it is necessary to provide a magnetic starter

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Fig. 1
Baker Cement Wash-Down Whirler Float Shoe

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This Shoe was designed especially to facilitate the running of casing in a hole where bridges are likely to be encountered. As shown in Fig. 1, the Shoe is provided with a number of baffled side ports and when the fluid passes through these ports it is diverted as it leaves the shoe, in a downward and slightly lateral direction to provide a down-whirler action that is so highly advantageous. This hydraulicking or downward jetting action of the fluid washes away the sides of the bridge and the formation thus removed is readily circulated up the hole. At the same time that the bridge is disintegrated and washed away, the pipe is lowered through a free hole without danger of being stuck.

IN ADDITION . . . To Facilitate the Landing of Casing, the Baker Cement Wash-Down Whirler Float Shoe affords these important advantages:

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The Contest is Simple — The Rules are Few —

HERE IS WHAT IT'S ALL ABOUT

We are planning to run in the near future, a full page advertisement such as indicated by the rough layout opposite. What we lack is a photograph which will tie up properly with the headline "WASHING—NOT 'FUN' BUT OFTEN NECESSARY." By reading the first few lines of the copy shown in the layout you will see that this headline (plus the photograph to be supplied) merely serves as a parallel to lead into the story of the Baker Cement Wash-Down Whirler Float Shoe,—its use in washing out bridges — and its many advantages.

RULES AND REGULATIONS

1. There are no restrictions as to the subject of the photograph. It can be a child, such as a youngster having his ears washed or being given his (or her) Saturday night bath . . . registering disgust, distaste, or other reactions which you feel would best portray the headline "Washing—Not 'Fun,' But Often Necessary"; or it can be a pet (a good chance for dog lovers) undergoing the washing process. In fact, any subject or situation that will aptly portray the thought behind the above mentioned headline.

2. A cash prize of $75.00 will be given to the contestant, who, in the opinion of the judges, submits the photograph best suited for this advertisement.

3. Second prize will be $10; and third, fourth and fifth prizes $5.00 each. FIVE PRIZES IN ALL, TOTALING $100.00.

4. Upon the close of the contest, the finished advertisement will be published in the leading oil journals using the prize winning picture (with name of contestant) inserted in the space provided as shown in the accompanying layout.

5. Entries will be judged on the basis of how well the photograph portrays the thought expressed by the headline rather than on its merit as a photographic work of art. Fancy or elaborate entries will not count extra. All that is required is one glossy print not less than 2½" x 4½".

Type name and address on piece of paper—paste to back of print—DO NOT WRITE ON BACK OF PHOTO!

Each contestant can submit only one entry.

Professionally posed or retouched photographs will be disqualified—this is intended to be amateur work only.

6. This contest is open to any individual actively and directly connected with the drilling and/or producing branches of the oil industry other than employees of Baker Oil Tools, Inc., and its Advertising Agency. Entries will be judged by the Advertising Manager of Baker Oil Tools, Inc., and the Theo. M. Martin Company, Advertising Agency, and the decisions of the judges will be final. In the case of a tie, duplicate prizes will be awarded.

7. Contest closes July 15, 1939, and entries postmarked after that date will be disqualified. Winners will be announced about August 15, 1939.

8. No entries will be returned and those submitted will become the exclusive property of Baker Oil Tools, Inc.

BAKER OIL TOOLS, INC.
P.O. Box 71, Huntington Park, California

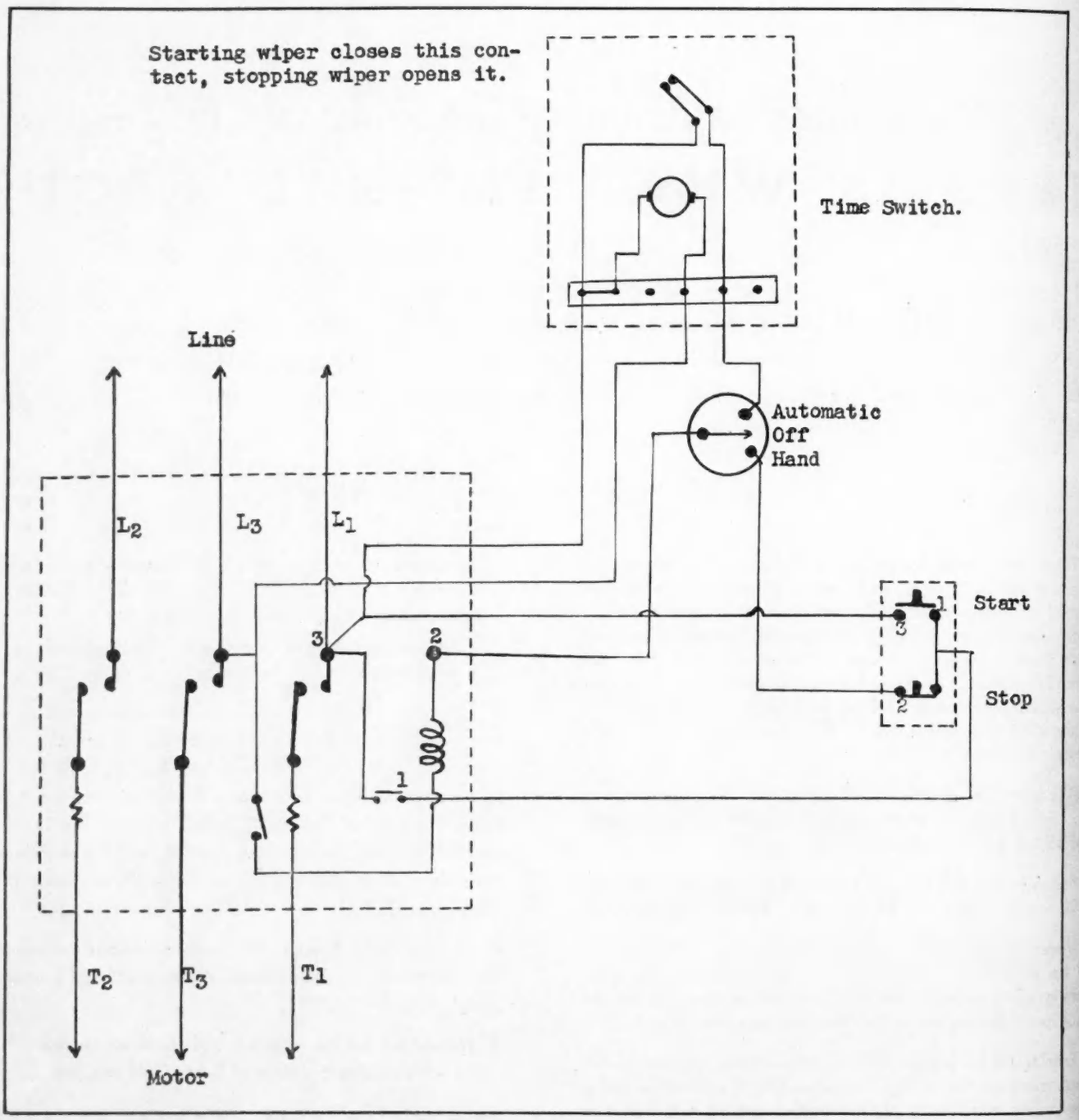
since the usual drum type controller with which they are equipped cannot be arranged for push button operation.

It is possible to pump more wells with energy from a generating plant of limited capacity if one will arrange an operating schedule in such a manner that the load on the system is practically constant. From the standpoint of voltage regulation it is much better to have a moderate sized load on the plant at all hours than to alternate heavy and very light loads. Usually there are enough part time wells on a property to enable one to balance the day and night load fairly well.

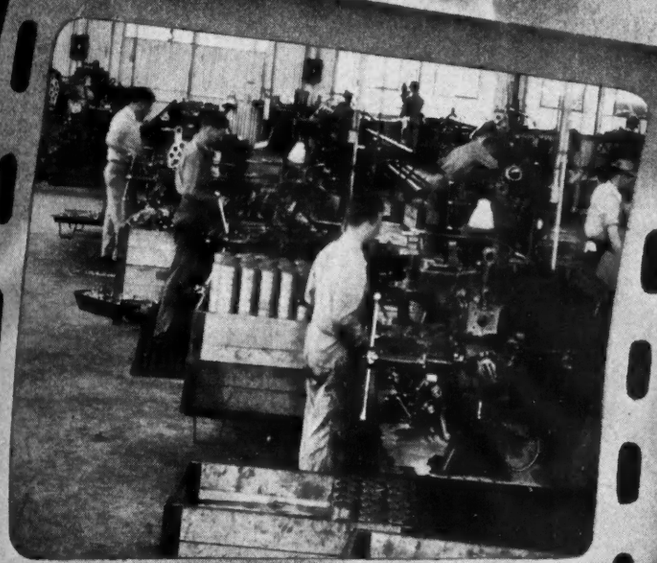
Vendors of electrical energy are in the same position with respect to the cost of producing power as that occupied by the operator of a small lease plant. If a customer uses energy at a fairly uniform rate throughout the day and thus keeps the maximum monthly power demand low he enables the power company to serve more customers from a given plant. A study of conventional rate schedules will show that the charge made for a given amount of energy is a function of the demand. There are very few leases on which part time wells are served under a demand meter that do not offer possibilities for making savings.

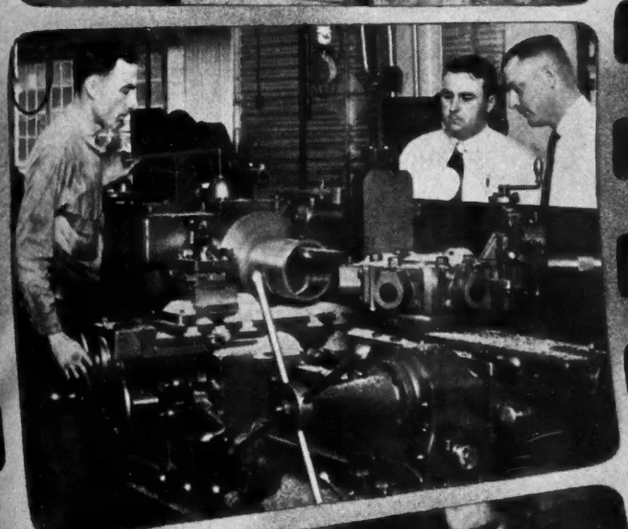
One of the simplest types of switches available is the single contact, single throw switch operated by a motor such as is used on the electric clocks found in many of our homes. It occupies about the same space as the familiar electric house meter and may be purchased equipped with a dust-proof, water-

Method of connecting single pole time switch in circuit of conventional type line starter.



The characters and situations in this story are entirely factual. Any references to living persons are purely intentional.





Scene I—Turret lathe department, Reda Pump Co., Bartlesville, Oklahoma. A. Artunoff, Vice President and General Manager speaks: *"Nine high-speed Warner & Swasey Turret Lathes run 24 hours a day in our plant—the oldest is 7 years old. To date, we have spent only $2.35 for repair parts."*

Scene II—The shop of the Oil City Brass Works, Beaumont, Texas. Turret Lathe operator Coleman, turning Bronzoid Bushings, boring straight within .0005 for a length of 7⅝". Shop superintendent George Bryant, is talking to L. M. Cole, a Warner & Swasey field engineer: *"We produce exactly 100% more on the new Warner & Swasey than under former method."*

Scene III—English Electric Co., Ltd., at St. Catharines, Ontario, Canada. Here high-grade cast iron cartridges are made—a very accurate job—outside diameter held to ∓.001, a hole in the head held to ∓.0004. *"Nice going,"* says Foreman Sharpe, checking the job, *"we have increased production 100% since transferring the job from an old machine to a new No. 5 Universal Warner & Swasey."*

WARNER & SWASEY
Turret Lathes
Cleveland

If your manufacturing processes include metal turning, install new, modern Warner & Swasey Turret Lathes. You can then produce profitable pictures, like the above, right in your own plant.

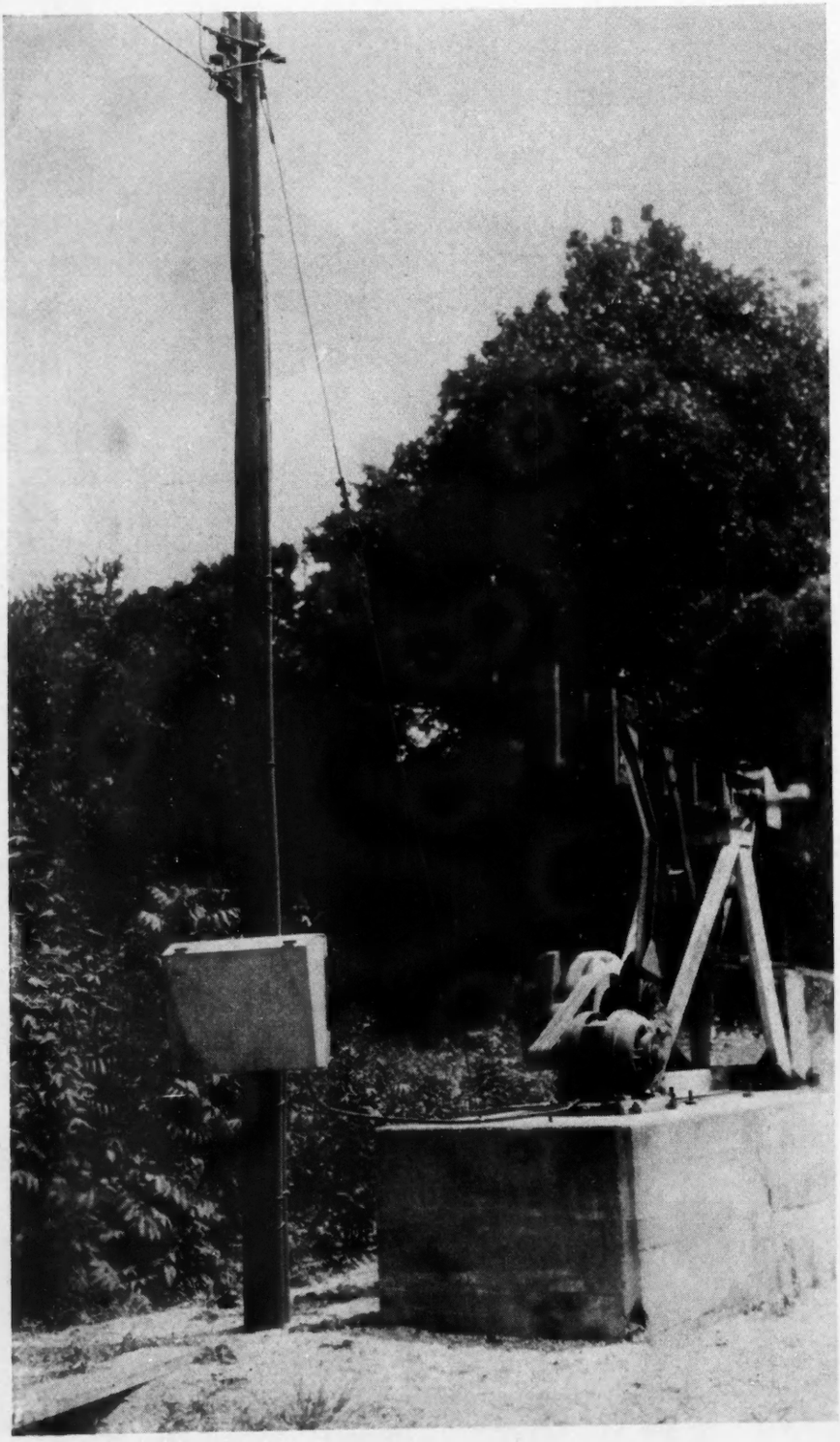
proof case or open for mounting in a cabinet. The manner in which it is connected in the circuit is shown in the accompanying sketch. As a matter of safety and convenience to operators a three-point auxiliary control switch should be provided.

The auxiliary switch has three positions, "hand," "off" and "automatic." When set on the hand position the time switch is cut out and the motor may be controlled in the conventional way by the push button. On the automatic setting the clock is in control and on the off position it is impossible to start the rig. Obviously the auxiliary switch is a safety device provided primarily for the protection of the pumper and for others who may be working about the rig. As an additional precaution it is well to post signs on both sides of the rig advising the public that the unit starts automatically. Otherwise some visitor is likely to be sticking his head through the guard rail about the time the crank starts to revolve.

Some of the switches on the market are rather elaborate and include such features as missing a day, a provision which may be utilized in fields subject to week end closing. In general the simple single contact switch is ample. The running and down periods are determined by the position of adjustable riders fastened to the edge of a circular dial marked in hours and fifteen-minute periods.

A recent innovation for operating small pumping motors with time switches is the elimination of the magnetic switch and the application of a three-pole switch for both purposes. The time switch is connected directly in the mains of the motor and breaks the circuit when the motor stops. With this arrangement of apparatus under voltage and overload protection, except that offered by the line fuses are sacrificed. The theory is that it is more economical to rewind a small motor occasionally than to go to the expense of purchasing magnetic switches for all motors. Data are not as yet available showing whether this assumption is true but it appears to be sound.

Next Week: Problems of Pumping in Repressured Areas, by John W. Cushing.



Electric powered pumping unit driven through automatic power switch. The element is protected in this installation from rain and dust by a box mounted on the power pole. Protecting fuses are enclosed also.

"BEEN GAUGIN' TANKS 20 YEARS — AND I KNOW!"

It takes the "old heads" to best appreciate real values in tanks . . . men who have worked with them, on them, in them, erected and torn them down. They get to really know tanks, one make against another. Take, for example, the oldtimer (above right) who's been gauging tanks for two decades. It means something to us when he takes time off to compliment the extra values in our own tanks, such as our **exclusive corrugated decks, improved cleanout openings, three-in-one valves, precision fit of parts, prepunched packing, quality fabrication,** and **the advantage of our complete stocks and prompt erection service available in all active fields.** His opinion is the consensus of opinion among thousands of men who know tanks from experience, who have worked with about all of them, who have seen tank manufacturers come and go . . . and who have seen Parkersburg continue not only to build tanks but to improve them and the service behind them.

THE PARKERSBURG RIG & REEL COMPANY

PARKERSBURG, W. VA.

DALLAS • HOUSTON • TULSA

LOS ANGELES • NEW YORK

C-3-39

THE PARKERSBURG RIG AND REEL CO.

Structures in Sparta-Wilcox Trend Disclosed by Magnetics

By WILLIAM M. BARRET
President, William M. Barret, Inc., Shreveport, Louisiana

Immediate problem is that of combing an enormous area for favorable structures at satisfactory cost.

THERE is an important question of timely interest in the minds of many oil operators today. The question is: how is the best way to find favorable Wilcox structures in the vast Sparta-Wilcox trend? By "best way" is meant that approach which yields the maximum return in structures for a given investment in exploration.

It is too early yet to advance the best formula for finding structures in the so-called trend, but recent results indicate that the magnetometric method may be well suited to disclosing anticlinal structures in this important area.

Two factors account for its suitability. First, with properly organized field crews, the method is inherently adapted to covering large areas rapidly and at comparatively low cost. And second, the Sparta-Wilcox trend is technically suited to magnetics. This is for the following reasons:

1. The surface materials which cover the trend are but feebly magnetic, and hence do not disturb or obscure the magnetic effects arising at depth.

2. The magnetizable basement rocks lie at such great depths in the trend that their magnetic reflection will not interfere with the anomalies traceable to folding in the sedimentary section.

3. The Wilcox section is the shallowest lithologic unit encountered in the trend which carries appreciable quantities of magnetic material, and because of its magnetizable properties and great thickness, the principal magnetic anomalies of local areal extent observed in the trend probably will be due to folding in the Wilcox section.

This set of conditions should result in a definite magnetic reflection of Wilcox structures. And experience indicates that it does.

As examples of the "type" anomaly caused by two well known structures in the Sparta-Wilcox trend, consider the accompanying map, which illustrates the results of one form of magnetometric survey carried out over the Cheneyville and Eola oil fields. The contours show how the anomalous vertical intensity varies throughout the area covered.

It is seen that in both the Cheneyville and Eola fields the present oil-producing areas are embraced by closed contours which represent magnetic "highs," or maxima, and that displaced northward from these maxima there appear closed contours indicating magnetic "lows," or minima.

It is believed probable that pronounced Wilcox structures, similar to those at Cheneyville* and Eola, will give rise to diagnostic magnetic anomalies of the type shown.

The combination of a vertical-intensity maximum and conjugate minimum will no doubt indicate the presence, and roughly define the respective southward and northward extent of a local structural fold in the Wilcox. But experience has shown that anomalous horizontal-intensity measurements, in addition to the vertical-intensity data, are needed in determining the areal pattern of the structure.

It is evident from the magnitude of the anomalies reflecting the Cheneyville and Eola structures that precise field data will be required to obtain reliable results in mapping Wilcox structures of this general character. The definition of anomalies of this order entails no hazard, however, if use is made of well trained field crews, modern apparatus, and proper operating technique.

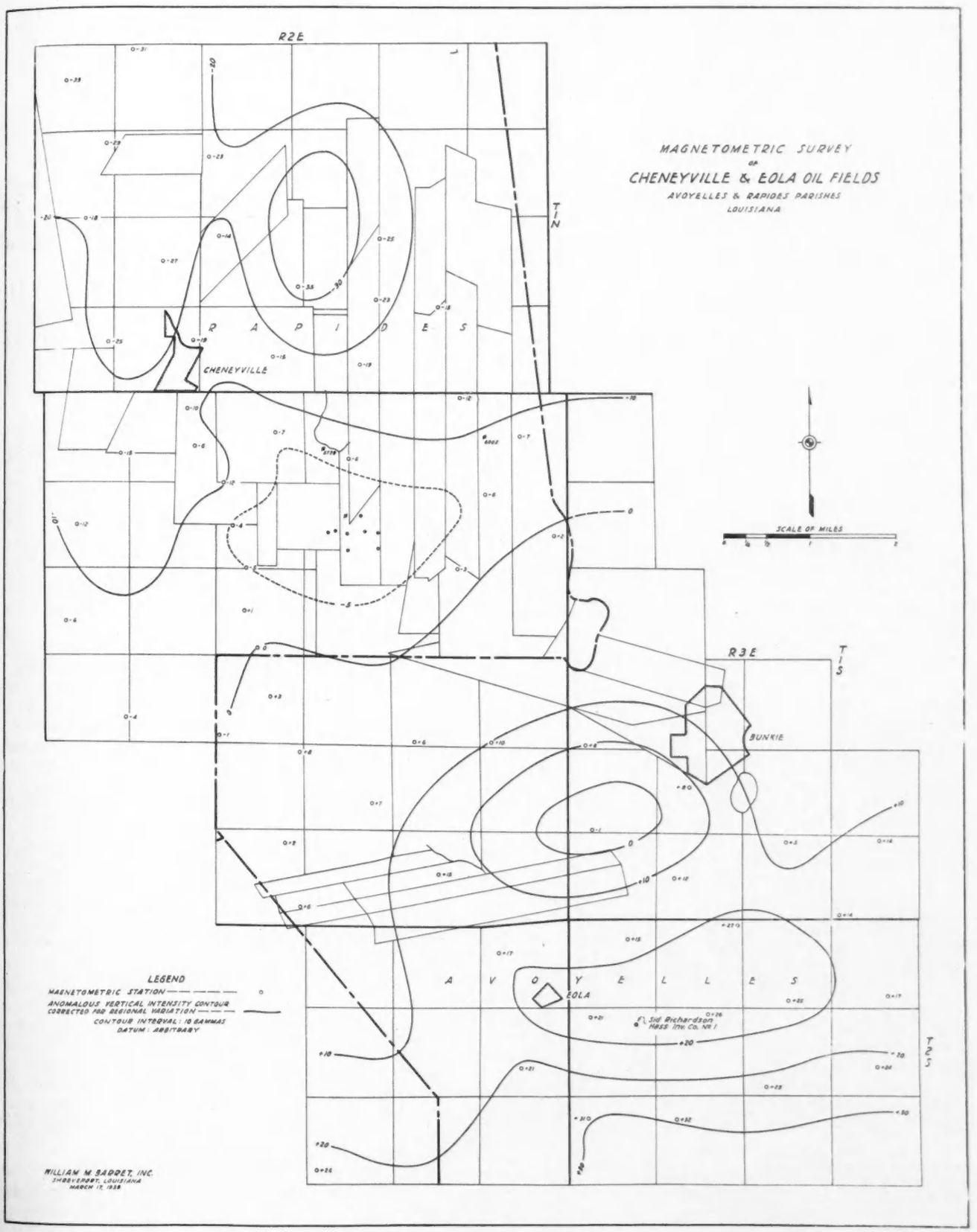
The present conception of the Sparta-Wilcox trend embraces something like 25,000,000 acres, and in all probability but a tiny fractional part of the total area will enclose Wilcox structures of economic importance. The immediate and pressing problem is to comb this enormous area, weed out the unfavorable portion, and disclose the favorable structures which exist; all at a cost which will not make the exploration program top-heavy.

The rapidity with which large areas can be surveyed by the magnetometric method, and its com-

* The vertical-intensity contours suggest that in the Cheneyville field the structural deformation in the Wilcox persists over a much larger area than indicated by the present oil production from the steeply folded Cockfield formation, which is known to overlie a salt mass (perhaps a salt spline that penetrated the southward portion of the elevated Wilcox area).

paratively low cost of operation, recommend its use for this purpose.

A well organized field crew, conducting both vertical-intensity and horizontal-intensity surveys, and operating base-control apparatus, will cover about 10,000 acres per working day when the average interval between stations is of the order of one and one-half miles, which is considered adequate detail for locating pronounced Wilcox structures. Working at this rate, a crew will investigate between 250,000 and 300,000 acres per month, and it can do this at a cost of less than 2 cents per acre.



Geology of the Klene Structure in Arizona

By DONALD K. MACKAY, Geologist

THE area to be described has been listed by the Arizona Bureau of Mines as one of the localities in the state where oil or gas may possibly be found in commercial quantities.[1] It is located in southeastern Pima County, T. 19 S., R. 18 E., and is approximately 61 miles over a good road, southeast of Tucson.

Development to Date

The possibility of an anticline in this locality was noted some 14 years ago by L. W. Klene of Star King ranch, who leased acreage on top of the structure. Messrs. R. J. Leonard and Roy Wilson, geologists at the University of Arizona, made a reconnaissance survey of the area and the results of their work were incorporated in a four-page typewritten report and map of the Klene anticline. Attempts were made to interest oil companies in drilling a well on the structure, without avail, and in the summer of 1938 the writer was asked by interested parties to check the report mentioned and make a more detailed examination of the area. The month of August 20 to September 20, 1938, was devoted to this work.

Acknowledgments

The brief typewritten report and map by Messrs. Leonard and Wilson, already referred to, proved helpful, and the writer concurs with many of the conclusions contained in that report, differing chiefly in regard to the thickness of source beds and details regarding the map of the structure.

Thanks are due B. R. Hatcher, district manager of American Smelting and Refining Company, for his co-operation, and A. T. Abbott of the University of Minnesota for able assistance in both reconnaissance and detailed mapping of the area.

Credit should be given V. Holm and Prof. A. Stoyanow for identifying some of the fossils found. Acknowledgment is also due Dr. G. M. Butler and Dr. E. Wilson of the University of Arizona for helpful suggestions and criticism of the present report, and to Foster S. Naething, general manager of Mammoth-St. Anthony, Ltd., who granted leave of absence to the writer from his duties at Mammoth mine, thereby making the work possible at this time.

Topography

The area lies near the eastern edge of a broad inter-mountain valley between the Santa Rita Mountains on the west and Whetstone Mountains on the east. This valley is approximately 12 miles wide from east to west and more than 20 miles long. The valley floor is for the most part a gently rolling grassy plain which in the vicinity of the structure is about 5000 feet above sea level. The adjacent Whetstone Mountains to the east rise above it to heights of over 7500 feet above sea level.

Erosion through the alluvial plain of the valley floor has partially exposed the Klene structure which extends in an east-west direction.

On the southeast side a portion of the alluvial plain is bounded on the north by a steep scarp. The Klene structure is exposed in the adjacent bowl-like depression from which the alluvium has been eroded. There is about 300 feet of relief between the alluvial plain and the lowest elevation on the structure (in the creek which crosses it from southeast to northwest).

An abrupt change in topography from an almost featureless plain to the parallel arrangement of narrow ridges and gulleys is apparent. Erosion has filed away the softer sands and shales more rapidly than the sandstones so that the sandstone beds stand out as parallel ridges. Because of the steep dip of these strata on the flanks of the structure the ridges appear very close together.

These parallel ridges and gulleys may be traced around the north, west and south sides of the structure but are concealed beneath the alluvial plain on the east side.

In the area immediately north of the structure just referred to, the strata forming the syncline are to a large extent masked by alluvium and have little expression in the topography. Still farther north, the alluvial deposits have been almost entirely removed by erosion and the topography shows a striking arrangement of row upon row of parallel east-west ridges. This topography is produced by hogbacks of sandstone with dip slopes towards the south separated by east-west drainage channels developed by erosion in the softer intercalated sands and sandy shale beds. The rhyolite sills near the base of the section appear white in contrast with the grayer sandstones but in other respects they have the same topographic expression as the thick-bedded sandstone.

Due to the constant southward dip and nearly continuous exposures for miles across the strike of the formation, it was possible to examine in detail a thick geologic section which on the Klene structure lies beneath the surface to a considerable depth.

The vegetation on the Klene structure and in the area described north of it, is of the semi-arid type. Plants of the cactus variety

[1] Arizona Bureau of Mines Bulletin, "Petroleum," by G. M. Butler and J. B. Tenney, published by the University of Arizona, Vol. 11, No. 1, March, 1931, p. 43.

FIGURE 1

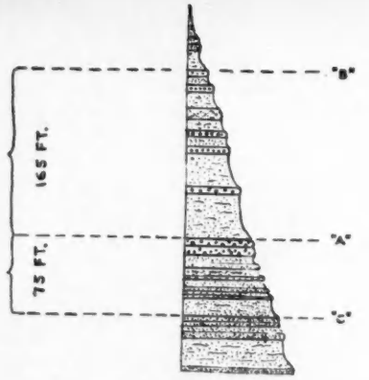


DIAGRAM — PART OF GEOLOGIC SECTION (UPPER CRETACEOUS) SHOWING INTERVALS BETWEEN KEY BEDS.

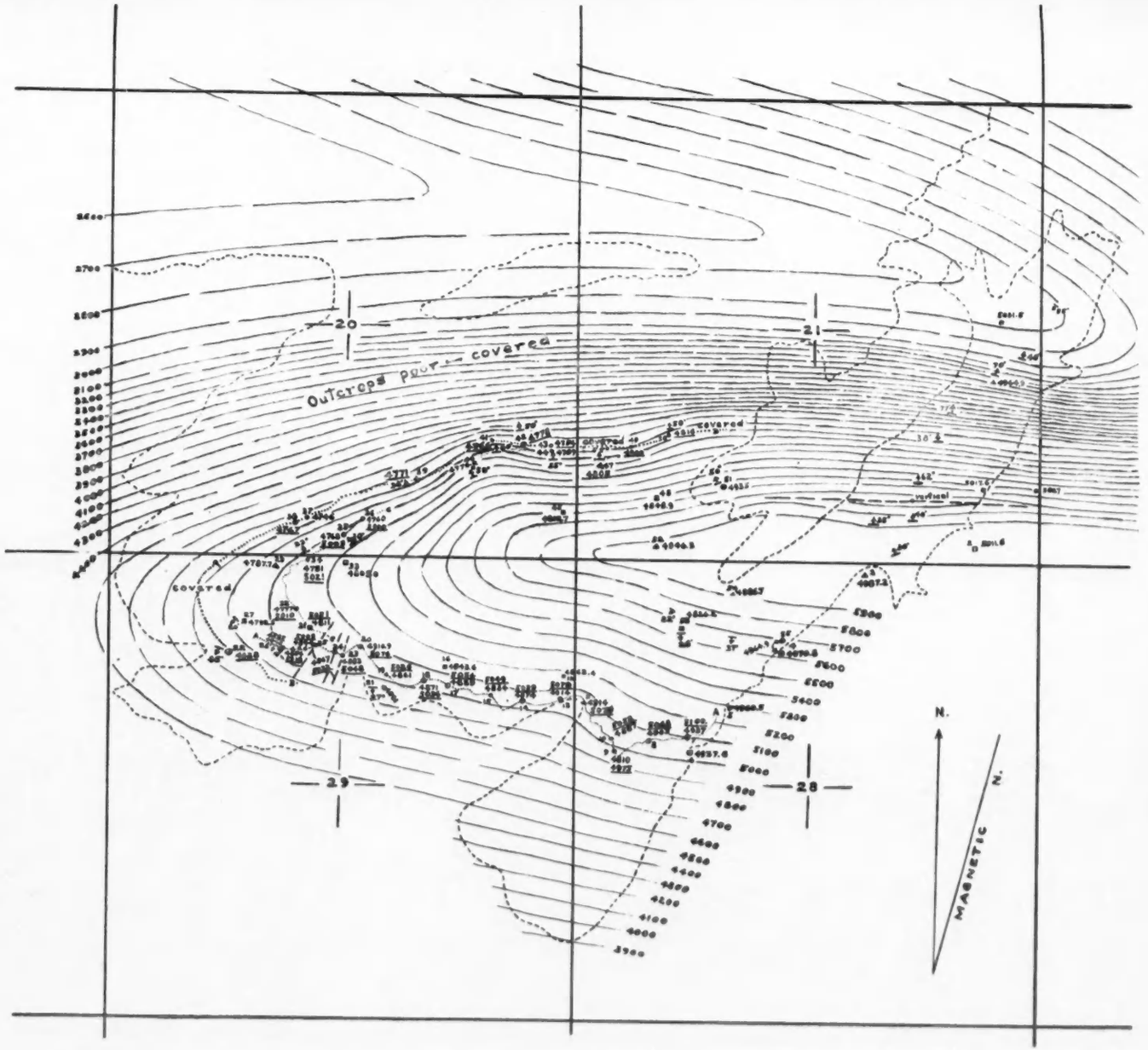
GEOLOGICAL MAP
OF THE
KLENE STRUCTURE
T. 19 S., R. 18 E.
SOUTHEASTERN PIMA COUNTY,
ARIZONA.

INSTRUMENT — A.T. ABBOTT
GEOLOGY — D. K. MACKAY

LEGEND

- ---- SCARP OF ALLUVIAL TERRACE
- B..... KEY BED "B"
- A..... KEY BED "A"
- C..... KEY BED "C"
- ·4890 ELEVATION ABOVE SEA-LEVEL OF POINT ON KEY BED
- ·4965 ELEVATION IN TERMS OF "B" BED
- ——— CONTOUR
- — — CONTOUR (INFERRED)
- ⅄50° STRIKE AND DIP
- ——— FAULT
- ▫ PLANE TABLE STATION
- ▲ TURNING POINT
- ·27 STATION ON KEY BED

CONTOUR INTERVAL — 100 FT.
SCALE — 1 IN. = 1000 FT.



are numerous. There are few trees and a sparse covering of grass. The area serves as relatively poor range for cattle. Except for an occasional water hole, the stream channels are dry during the greater part of the year.

Stratigraphy

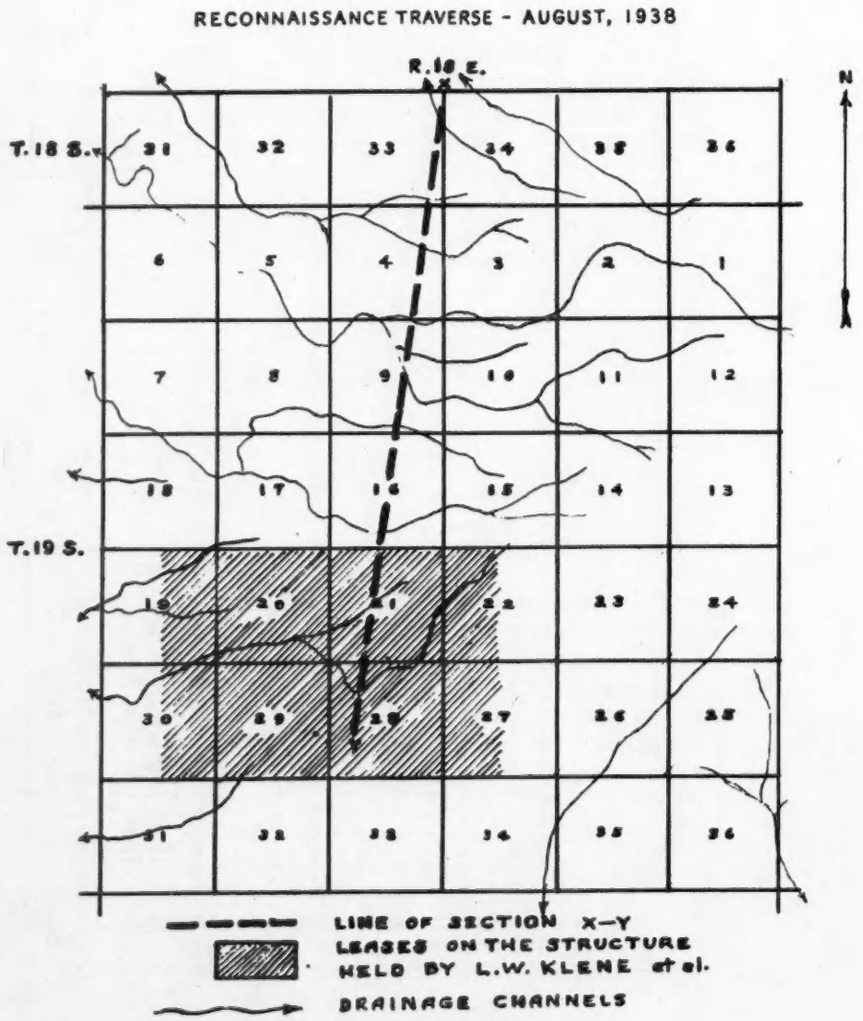
As already indicated under "Topography," the dip in this part of the region is towards the south. It averages about south 20° west and is interrupted by folding—the Klene structure. The strata involved in this fold from the crest for thousands of feet below the surface, are well exposed in the area north of the structure. The bevelled edges of the sandstone and shale series in that area appear as long rows of ridges and valleys striking from east to west.

A stratigraphic section was made northward at right angles to the strike as shown by the line X—Y in Figure 1. Strata totalling about 9000 feet in thickness were examined between points X and Y, and it is estimated that nearly 7000 of these beds lie beneath the surface in the Klene structure.

The section obtained constitutes the thickest series of sandstones and sandy shales the writer has even encountered in long experience in the field. The section is shown diagramatically in Figure 2, and may be briefly described as follows:

	Thickness
Sandstone, gray, conglomeratic to medium grained, friable, beds up to 10 feet thick, weathering brownish; interbedded with sandy shale, reddish to chocolate colored. This section contains a chalcedony bed about 3 inches thick and several conglomeratic sandstone beds which were used as "markers" in mapping the structure	2000 feet
Sandstone, gray to brownish, fine to coarse grained, friable, some beds conglomeratic; crossbedding common; beds up to 25 feet thick, interbedded with sandy shale up to 30 feet thick of reddish to chocolate color and containing in places small calcareous concretions	2100 feet
Sandstone, hard, gray, coarse to medium grained, some crossbedded and platey, beds about 10 feet thick; interbedded with sandy shale, dark red to chocolate and dark gray to greenish gray. In lower portion an unusually thick break of 150 feet of dark gray shale less sandy than usual	500 feet
Sandstone, brownish gray, medium to coarse grained, beds up to about 5 feet thick; interbedded with sandy shale, dark gray to greenish gray. Section is intruded by two lenticular rhyolite sills each about 20 feet thick near top and middle portion. At base of section another rhyolite sill about 200 feet thick	2100 feet
Sandstone, thin bedded, dark gray to brownish, coarse grained, friable, beds up to 5 feet thick; interbedded with sandy shale, reddish gray to dark gray	1200 feet
Limestone, hard, sandy in places, blue gray, 3 to 4 feet thick, containing numerous upper Cretaceous fossils. Twenty feet below it, a thin lens limestone	5 feet
Sandstone, thin bedded, brownish gray, medium to coarse grained, friable; interbedded with sandy dark gray shale. A thick sill of rhyolite in upper middle portion.	1000 feet

FIGURE 2



A careful search was made for fossils throughout the section but none were found except some fossil wood and only a single unidentified gastropod until the limstone bed was encountered near the base of the section. Fossils from the latter (chiefly a small species of ostrea) were determined by Prof. A. A. Stoyanow, of the University of Arizona, to be unquestionably of upper Cretaceous age. In the absence of other fossil evidence and because there is no apparent unconformity in the section above the limestone bed to the uppermost bed on the Klene structure, the entire series is considered to be of upper Cretaceous age.

The large amount of crossbedded sandstone in the section described, the presence of fossil wood, and the scarcity of marine fossils, suggest that the formation accumulated in relatively shallow waters—possibly an inland arm of the sea; or, as a huge delta deposit at the mouth of a large river.

Organic marine sediments are believed to be the source beds of petroleum. Indications are that such beds occur only sparingly in the section under consideration, since the thin bed of sandy limestone near the base contains the only known marine fauna found in the formation.

The only other beds in the section which may be considered as possible source beds are the less sandy dark gray to black shales. These contain occasional leaf and stem fragments and an intensive examination of these strata yielded only the one small specimen of gastropod already referred to. The latter was secured and placed with rock samples to be sent to the University of Arizona but was lost before it reached the laboratory. Some of the least sandy of these black shales are said to have given positive tests for oil and appear to have a slight odor which may be considered as oily. It was thought

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THE 1939 COMPOSITE CATALOG

"The finest catalog ever compiled for the oil industry and a genuine help to us in the selection and purchase of equipment. The new classified Index makes it perfect."

Comments like this from oil men the world over testify to the widespread popularity and usage of the 1939 edition of The Composite Catalog. It is a convenient and up-to-date time-saver in which over 400 leading manufacturers of drilling, production and pipe line equipment have filed catalogs on their products.

THE COMPOSITE CATALOG

SAVE TIME — Speed up your orders by referring to the item by page number in The COMPOSITE CATALOG

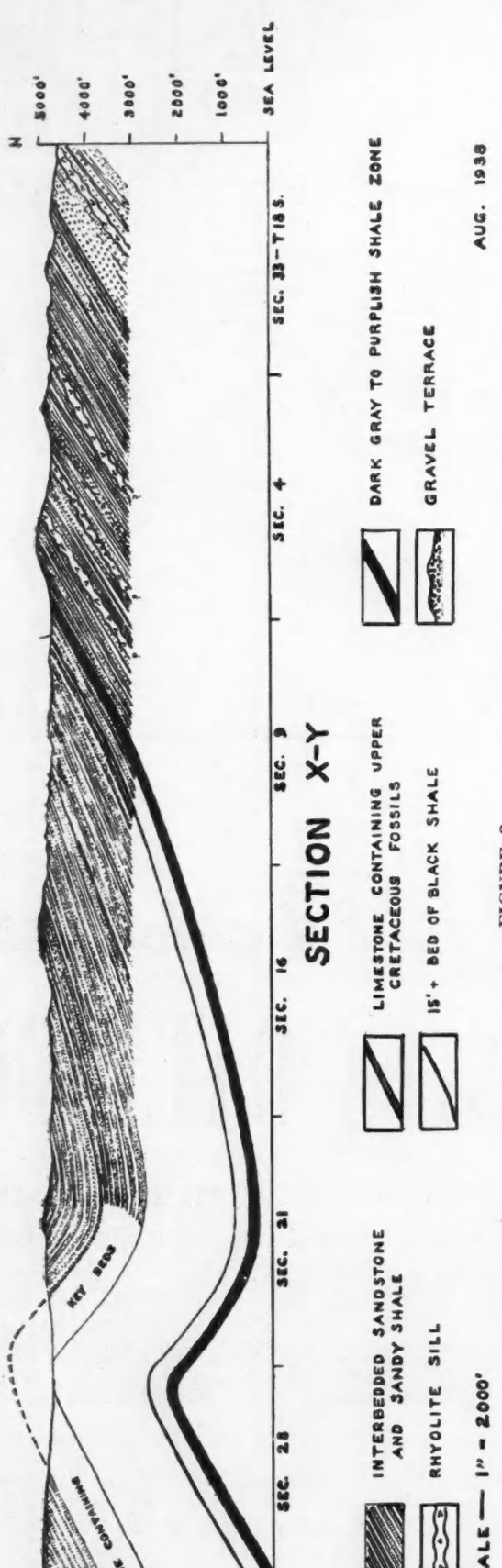


FIGURE 3

they might contain microfossils such as foraminifera commonly found in marine shale by means of which the origin and age of these beds might be determined. Accordingly, a representative sample of the dark gray to black shale was collected and sent to Dr. J. J. Galloway, Professor of Micropaleontology, University of Indiana, for analyses. In a letter dated September 19, 1938, Dr. Galloway states:

"I have looked over the material carefully and find no fossils in it of any kind. There does not seem to be much oil in the shale either, for it will not burn nor give a distillation test, and the black material is more likely carbon from land plants. I do not know the shale and see nothing to indicate its age."

The break of about 150 feet thickness of dark gray shale with relatively thin beds of similar shale both above and below it, is indicated by an interval shaded black in Figure 3. With the possible exception of a few hundred feet of these strata, the shale beds appear too sandy to contain appreciable organic material. Even in the doubtful few hundred feet, in view of the lack of megascopic fossils and Dr. Galloway's statement regarding the representative sample, the source material for oil must be meager.

This general conclusion regarding source beds applies to the section within 7000 feet beneath the crest of the Klene structure. There may be deeper organic marine shales in the underlying lower Cretaceous and Paleozoic strata. The latter have undergone some metamorphism. However, little is known regarding the character and extent of these formations underneath this area and any statement pertaining to the amount of source material they contain would be speculative.

Four sills of rhyolite were found in the lower part of the section and are indicated in Figure 3. Like other numerous intrusions of rhyolite in adjacent regions, they are probably of Tertiary age. The sills are lenticular and may not extend far enough down dip to be involved in the Klene structure.

The alluvial deposits which form the valley floor east, south and west of the Klene fold, are probably from late Tertiary to recent in age.

Structure

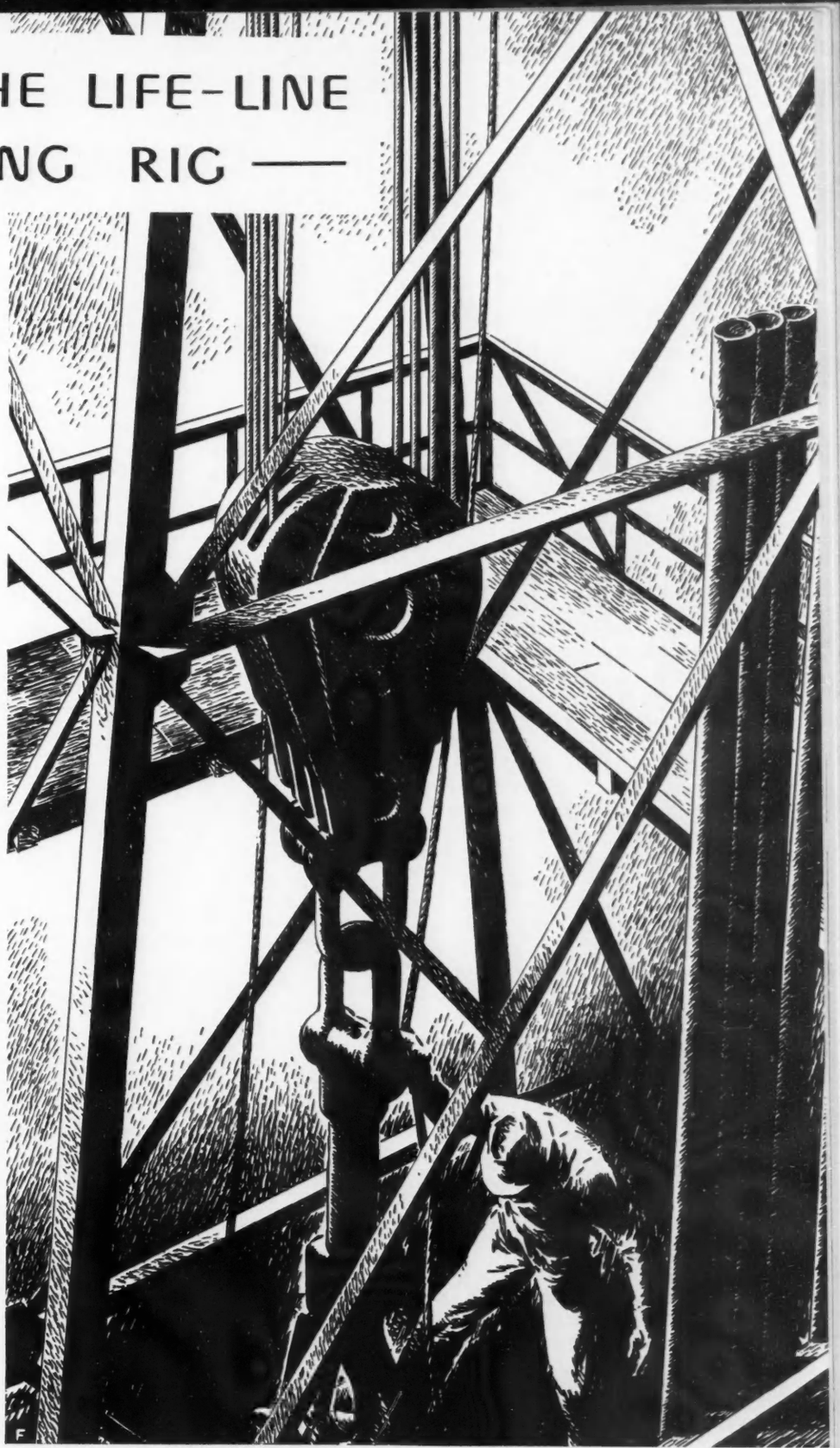
The south to southwest dip averaging 20° across which the geologic section was made, is interrupted by the Klene structure. This dip continues southwestward from the structure beneath the valley fill for a considerable distance. This long dip represents the northeast side of a deep synclinal basin which occupies the northern portion of the broad valley between the Whetstone and Santa Rita mountains. The Klene structure lies along the northeastern edge of this basin.

Within the synclinal basin it is to be expected that water will be present at depth under hydrostatic pressure since there is a hydrostatic head in the mountains and foothills where these strata outcrop. Such waters may reach higher beds along fractures or faults and although the Klene structure is well up on the flank of the syncline, water under hydrostatic pressure may lie within drilling depths. Any oil that may be present in the beds penetrated by these waters would be flushed out and accumulation would take place in traps from which it could not escape. Whether the Klene structure constitutes such a trap or whether there is enough source material to

WIRE ROPE IS THE LIFE-LINE OF YOUR DRILLING RIG —

and

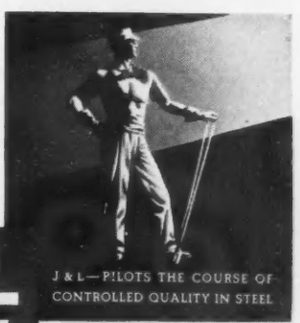
GILMORE PRECISIONBILT WIRE ROPE—made of J&L Controlled Quality Steel—helps you protect life and your investment



ood wire rope is good insurance against stly shutdowns and injuries. And good pe that gives long, safe, economical ser- e must be formed with precision from re drawn from the finest steel.

Gilmore Precisionbilt Wire Rope—made J & L Controlled Quality Steel — gives u this combination of security and ser- e. For the quality of J & L Steel is con- lled from the grading of the iron ores to drawing of the steel wire. And this lity-controlled wire is formed into Gil- re Rope in the country's most modern e-rope plant where skilled men work with knowledge that sometime in the life of ry rope they make, human life may de- d upon its performance.

There is a Gilmore Precisionbilt Wire pe for every oil country need . . . certified by laboratory tests to A.P.I. Standards . . . ked in your territory ready for quick pick-up or delivery. Ask for our catalog — "Oil ntry Lines" — describing the full range of ropes we make for the petroleum industry.



J & L—PILOTS THE COURSE OF CONTROLLED QUALITY IN STEEL

ONES & LAUGHLIN STEEL CORPORATION

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MUNCY, PENNSYLVANIA

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yield oil or gas in commercial quantity is doubtful and this will be discussed further.

The eastern part of the Klene structure is covered by flat-lying alluvial beds of the valley fill. These deposits terminate abruptly at an escarpment overlooking the western part of the Klene structure from the east, south and west. A remnant of these alluvial beds in the form of a small butte occupies part of the syncline to the north of the structure. The escarpment at the edge of the alluvial deposits is indicated approximately on the planetable sheet.

Some difficulty was experienced in finding suitable key beds to be used in mapping the Klene structure. The sandstone and sandy shales exposed on the flanks are so nearly alike in character that no clean-cut "marker" could be found among them. An exception is a 3-inch bed of chalcedony which is covered by rock debris in most places. Because of this similarity of strata it was necessary to use those beds which could be followed continuously on the surface for the longest distance. The beds designated "A" and "C" seemed better than the others in this respect and were consequently selected. Both "A" and "C" are thick sandstone strata. "A" is conglomeratic and lies 75 feet above "C."

The main key bed "B" is the 3-inch layer of chalcedony already mentioned, which lies in sandy shale above a sandstone bed about 5 feet thick. It is approximately 165 feet higher in the section than the "A" bed. Elevations on "A" and "C" were figured in terms of the "B" bed and the map contoured accordingly. Other contours are based upon dips obtained with Brunton compass. The resulting map represents the structure as accurately as could be determined in the time available for the work.

The structural features are indicated on the map and may be briefly summarized as follows:

(1)—The position and direction of the axis nearly coincides with the east-west section line.

(2)—The dips on the north flank average more than 40 degrees and on the south flank about 20 degrees.

(3)—There are a few faults in the direction of the dip and strike. These have relatively small displacement and are of little importance.

(4)—The structure plunges westward.

(5)—The eastern part of the structure is so extensively covered by alluvial deposits it is impossible to determine whether or not there is closure on that side. It is barely possible that the structure exposed is part of a nose plunging westward from the Whetstone Mountains. On the other hand, with the information available, it is equally possible there may be 1000 feet or more of closure on the east side. The contours as far as they can be drawn suggest that there probably is some closure.

Economic Considerations

In discussing the possibility of oil or gas production on the structure several important factors must be considered which may be briefly summarized as follows:

There are several rhyolite sills exposed in the section several miles north of the structure. The proximity of these intrusions suggests that any oil which may have been present originally in the strata involved in the Klene structure was probably largely volatilized by the heat of intrusion. The possibilities are greater, therefore, for the occurrence of gas than for oil on this structure.

The presence of a few hundred feet of the less sandy dark gray to black shales which may possibly constitute source beds, has already been mentioned. These strata are not considered to be of sufficient thickness to yield oil or gas in commercial quantity.

Little is known regarding the underlying lower Cretaceous beds and Paleozoic formations. They might contain organic marine shales. It should be mentioned that the possibility exists that oil or gas from such strata might enter higher beds provided faults or fractures are present in the basin, and pass up the dip to the structure.

Lack of sufficient thickness of known source beds is the most serious defect of the Klene structure. Of course, the known 7000 feet of section may change basinward and contain more organic material and there is a possibility of source beds beneath this section, but these are matters of pure speculation. On the basis of available information there does not appear to be a sufficient thickness of organic marine sediments to yield oil or gas in commercial quantity.

There is closure on three sides of the structure—north, south and west. While alluvial deposits completely cover the eastern side, it is considered likely there is some closure on that side also, judging from the contours as far as they can be drawn. However, this is not definitely known and it is a matter of speculation as to whether the structure is a westward plunging anticline and therefore a satisfactory trap for oil or gas that might be present or whether it is a nose plunging westward from the Whetstone Mountains, in which case there would be no closure and the structure would not trap any oil or gas that might enter it.

Conclusion

There are numerous strata of coarse sandstone throughout the section examined which extends to about 7000 feet below the crest of the Klene structure. These beds lie between more or less impervious sandy shales and may be considered as potential reservoir rock if the structure is closed. Lack of knowledge regarding closure on east side constitutes a serious risk that must be taken if a well is drilled for oil or gas. It seems to the writer, however, that scarcity of organic marine sediments or source beds of oil in the 7000 feet of strata below the crest of the structure presents by far the greatest risk involved. The few hundred feet of the least sandy of the dark shales in this sand and shale series, probably yielded some oil which was possibly volatilized by the heat of intrusion and folding. The writer does not believe there is sufficient source material in the section described, to produce oil or gas in commercial quantities and, therefore, the drilling of a well on this structure is not recommended.

If the evidence submitted above should not be conclusively convincing, it should be desired to test the possibilities of these strata on the structure; the well should be located on the south flank near the crest and preparations should be made to carry this test to a depth of about 6000 feet.

Edited by
WM. V. GROSS, Associate Editor

Europe's Situation

Self-sufficiency far from realized by autocracies. Germany and Italy's efforts accomplishing little.

Charles Will Wright, foreign mineral specialist of the United States Bureau of Mines who has recently completed a study of the progress in petroleum producing countries in Europe, has come to the conclusion that in Germany and Italy, the optimistic plans for large increase in domestic output and eventual self-sufficiency in motor fuels are far from being realized.

He points out that Germany now produces less than a third of its requirements; and as consumption is increasing it is not likely that the German output of crude oil or synthetic gasoline will exceed a third of its requirements for some years.

Italy and Albania

Oil fields in Italy and Albania, he says, supply only 5 percent of Italian requirements, and the outlook for any substantial increase is not promising. The two new plants at Bari and Leghorn (annual capacity 300,000 tons) built to refine crude from Albania will have to depend upon imported crude for two thirds of their supply. Wright observes that Italy's position relative to imports is unfortunate, as 70 percent of these imports enter the Mediterranean by way of Gibraltar, and in case of a war involving Germany, it is doubtful if Italy could get much oil from Rumania.

Production from the oil fields in Rumania is diminishing, but an attempt is being made at government expense and by liberal legislation to encourage more intensive exploration by the foreign petroleum companies in order to improve the situation. As consumption in Rumania is increasing the tonnage for export shows a large decrease.

In speaking of Russia, Wright says the oil reserves of U.S.S.R. are enormous, but the rising curve has flattened out and exports have been greatly reduced. Drilling operations recently were 40 percent under the "plan" fulfillment. A lack of immediately available [exploitable] oil supplies is having a serious effect upon those industries where motor fuel is needed.

Hungary is passed over hurriedly in the conclusion of the study with the remark that new discoveries there are soon expected to make that country independent of imports. Wright was referring to the field in southwestern Hungary being operated by Hungarian American Petroleum Company, owned by European Gas & Electric Company which is, in turn, controlled by Standard Oil Company of New Jersey. The 1938 output from Budafapuzta was estimated by him at 50,000 tons, and the 1939 output was predicted at 210,000 tons, or enough to take care of Hungary's needs, eliminating necessity of imports, hitherto largely from Rumania. In addition to this field, geophysical pictures indicate several more structures below Lake Balaton. Plans call for drilling on these when conditions warrant.

Both France and Britain, Wright says, depend upon imports for 98 percent of their requirements and there appears but little chance of significantly increasing domestic output. They do have, however, important overseas concessions and are in a position not only to import their requirements but to prevent Germany and Italy from obtaining oil from certain overseas sources.

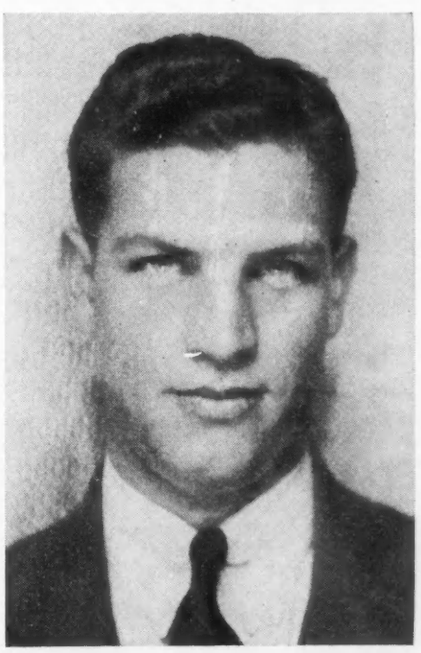
Most countries in Europe oblige the private oil companies to maintain on hand in the country involved a four months' supply of oil, and although the governments have built storage facilities for military supplies, it is doubtful, says Wright, if any of them have over a six months' oil supply.

Serious War Handicap

Because of the present political situation in Europe, the foregoing observations of Wright are interesting, for, in case of a war lasting over a period of years the final outcome may be determined by a nation's ability to get sufficient quantities of motor fuels and lubricants for its motorized army and navy forces. If petroleum companies were prevented from shipping oil to warring nations dependent upon them for their supplies, as are Germany and Italy, such nations would be seriously handicapped. Attempts are being made in these nations to meet such deficiencies by synthetic production of gasoline and the use of alcohol, though Germany lately has reduced the specification for alcohol in gasoline and is using more lead. From a purely commercial point of view, synthetic production is too costly.

Getting back to some of the developments of the past 12 months which may have justified Wright's conclusions, official Russia has been rather open in her condemnation of failure to carry out the drilling program, which called for 6,958,916 feet in 1938. Other things holding Russia's production curve relatively flat instead of allowing it to climb steeply are said to be excessive breakdown and idleness of equipment, failure of the Stakhanovite (piece work) labor movement and inefficient organization.

GOING TO VENEZUELA



L. E. Hess, now with Magnolia Petroleum Company at Rodessa, Louisiana, is being groomed for work with Socony Vacuum Oil Company in Venezuela. After a short stay in Rodessa, Hess will be shifted to fields in the upper Mid-Continent and Texas to broaden his experience before joining the petroleum engineering staff in South America. He is a graduate petroleum engineer from the University of Pittsburgh.

Canadian Fields

Estimates vary on cost of Turner Valley production.

Royalite Oil Company line declared common carrier.

The McGillivray Royal Commission investigating the Alberta oil industry, on resuming its hearings last week after a month's recess, delved into production costs of crude in Turner Valley, only to learn that the costs varied markedly with companies and wells as well as with factors considered, and then took additional testimony on the pipe line phase of the inquiry which had been occupying it since late last year.

While declaring he did not "think there is a man living who could definitely determine the cost of producing a barrel of oil in Turner Valley," R. A. Brown, Sr., discoverer of major crude production in South Turner Valley three years ago, set a figure of $1.25 a barrel, which he said was probably representative of wells drilled by his company. The figure, attributed to the Royal Crest well, assumes total recovery of 15,000 barrels of oil an acre, or 600,000 barrels for a 40-acre tract, with a life-time of 20 years for the well. It assumes natural production for 15 years, and artificial lift for the last five years. While it provided for the return of capital, it did not include any profit.

Morrison Testifies

Kenneth A. Morrison, auditor for Sunset Oils, Ltd., declared the cost of producing oil at the company's No. 1 during the period December 24, 1937, to October 31, 1938, was $1.39 per barrel if it were assumed that there were 5000 barrels to the acre on the 40-acre lease, and 70 cents a barrel if it were assumed there were 20,000 barrels to the acre.

Francis F. Reeve, appearing for Commoil, Ltd., and Command Oils, Ltd., told the commission that production costs at the two Commoil wells was 63 cents a barrel, exclusive of drilling costs or cost of leases except as reflected in depreciation or depletion, and also exclusive of income taxes and profit. The corresponding figure for the Command company's well was 87 cents a barrel.

A. L. Smith, counsel for the Anglo-Canadian Oil Company, Ltd., frankly told the commission that his company was unable to give an intelligent figure respecting cost of producing a barrel of crude.

Production costs at the three Model wells was given at $1.63 per barrel by William Ireland, who said the figure did not take into consideration the cost of drilling the wells nor the cost of the leases. He gave the production cost at the Mercury Royalties well, in production for only a few months, at 45 cents a barrel because of the initial flush yield.

Following recommendations of the commission made after several months of hearings concerning charges for transporting crude from Turner Valley to Calgary, refinery and shipping point, the legislature recently declared pipe line facilities of the Royalite Oil Company, Ltd., to be a common carrier and placed them under the jurisdiction of the Board of Public Utility Commissioners. The board is expected to make a new rate or confirm the present 15 cents a barrel charge for transporting crude from the field on recommendation of the royal commission, but not until additional testimony on this phase of the industry is taken.

The commission last mid-week delayed additional testimony on production costs to take testimony on costs of loading crude to railroad tanks cars and tank trucks at Calgary. At present a charge of 5 cents a barrel is made when tank cars are loaded at the Calgary plant of the Imperial Oil Company, Ltd., parent company of Royalite, but there are no facilities for loading tank trucks.

Would Necessitate Facilities

S. G. Coultis, manager of Royalite's pipe line system, told the commission that if the pipe line is to be divorced entirely from Imperial Oil Company special storage and loading facilities would have to be provided at Calgary.

Justice McGillivray expressed the opinion that the Imperial or any other company that performed the function of loading oil into tank cars and tank trucks following its transportation through the pipe line system, which is now a common carrier, would be brought under the jurisdiction of the Board of Public Utility Commissioners. He pointed out that it was not within the province of the Imperial Oil Company to "decline to become a public utility" with respect to loading facilities.

"Agreement on expropriation within reach"—Richberg

Expressing confidence that an agreement over Mexican oil expropriations was "within reach," Donald R. Richberg, attorney for American companies involved in the controversey, this week laid before State Department officials the results of his recent conferences with Mexican authorities in Mexico City.

While stressing that negotiations cannot be consummated until he has reported to his principals and President Cardenas has conferred with his government, Richberg indicated that the general lines of the agreement already have been laid down.

The suggested agreement, is was said, would involve a long-term contract, running possibly as long as 50 years, under which the companies would operate the Mexican properties in cooperation with the Mexican government.

Definite arrangements would be made for wage rates for employes and the revenue to go to the government, with the companies to secure a fair return from the sale of the oil produced. The companies would continue the development of Mexican oil lands, but at the termination of the contract the properties would go to the Mexican government.

State Department Quiet

While State Department officials refused to comment on the situation, since the negotiations are being conducted privately, it was said that Washington would have no objections to any agreement which was satisfactory to the oil companies.

It is rumored in some quarters of Mexico City that claims for the loss of profits, damages and the like experienced by the companies during operation of the oil business by the Mexican government and American citizens' claims resulting from old and new land expropriations may be liquidated by the United States government in connection with rental payments for an allegedly proposed naval base at Acapulco. Neither government has made any comment on the rumor.

Meanwhile, Vicente Cortes Herrera, managing director of Petroleos Mexicanos, the official government oil company, has forecast an increase of 60,000 barrels daily in Mexican production by the end of the year. Herrera's forecast is based on expectation of completing three additional wells in Poza Rica, the nation's richest field.

Herrera stated a market for the additional production would be provided by important barter deals with Germany for general machinery, with United States for drilling and other well equipment, with Italy for three tankers, and with Japan for silk.

Field activity greater in Poland; price unchanged

Poland reported completion of 30 wells in January, 4 more than were completed in December. Production amounted to 43,819 tons the first month of the year, contributed by the following districts: Jaslo, 12,643 tons; Drohobycz, 27,587 tons; Stanislawow, 3589 tons. The price of Polish crude remained unchanged at $32.30 per ton, or 1700 zlotys per car of 10 tons.

Poland's exports of various petroleum products during January amounted to 2811 tons, 1060 tons of which was gasoline consigned to Danzig and Gdynia, including that used for bunkering. Second largest export product was paraffin, shipments of which during January amounted to 835 metric tons.

Stocks of crude oil on hand in Poland at the end of January totaled 22,979 metric tons, a figure which has likely been greatly increased since then due to possible military needs.

Abandons Mexican field

After paying dismissed employes three months' compensation, Mexican Gulf Oil Company has abandoned a field in San Luis Potosi and a pumping station near Tancoco with the explanation that both are unprofitable.

MEN IN THE INDUSTRY'S NEWS

EAST TEXAS INDEPENDENT OPERATORS ORGANIZE ASSOCIATION FOR PROTECTION AND SCIENTIFIC RESEARCH

R. H. LAIRD, OIL MAN AND MAYOR OF KILGORE, IS HEAD OF ORGANIZATION

INDEPENDENT producers and royalty owners in the East Texas field have perfected an organization to be known as the East Texas Oil & Gas Association, with 54 directors representing 12 cities and towns in the district. R. H. Laird, mayor of Kilgore and prosperous royalty owner, accepted the nomination for president to serve until the new body becomes established.

H. P. Nichols, Tyler, has been employed as temporary executive vice president, with headquarters at Kilgore. The following were elected vice presidents: M. W. McVey, Kilgore; John R. Alford, Henderson; M. H. Bivens, Longview; Murray Sells, Gladewater, and R. W. Fair, Tyler. Jerry Sitton, Kilgore, was named secretary-treasurer.

Formation of a body to voice the sentiments of the independents on matters pertaining to the East Texas field began April 11 under the leadership of McVey; C. R. Starnes, Gladewater; John Schroeder, Greggton; W. M. Priddy, Tyler, and others. Meetings were held in the oil field communities to obtain support for a representative membership.

The purpose of the asosciation as set forth in its charter is "For the promotion and protection of the East Texas area as a whole, for scientific research into East Texas oil problems and to disseminate information for educational purposes."

R. H. LAIRD

CHAS. F. ROESER, Fort Worth operator and head of the Independent Petroleum Association of America; Sid W. Richardson, who has prospered through oil operations and also a resident of Fort Worth; and E. S. Fentress, Waco, Texas, newspaper publisher, have organized the Frontier Broadcasting Company to acquire radio stations at Waco and Austin from Hearst Radio, Inc.

JOE C. MAXWELL, independent producer and a director of the Texas Pacific Coal & Oil Company, has returned to his Fort Worth headquarters after an extended vacation, accompanied by Mrs. Maxwell, in South America and Africa.

EDWARD BIERSCHWALE, former sheriff of Kendall County, Texas, has been employed by the oil and gas division of the Texas Railroad Commission as field inspector for duty in the McCamey field, with headquarters at San Angelo. He relieves F. F. Parker, an inspector for the past 7 years.

T. E. SWIGART, vice president in charge of Shell Oil Company's Houston division, and O. Don Crites, manager of the crude purchasing department in the same division, visited the company's West Texas-New Mexico district office at Midland the past week. The company has authorized construction of a natural gasoline plant in the Wasson field, Texas, and Shell Pipe Line Corporation is starting a 6-inch line from the latter to connect with its trunk line at Hobbs, New Mexico.

H. C. B. HICKLING, for many years managing director of Apex (Trinidad) Oilfields in that colony, has, after a short sojourn in England, been appointed a director of British Borneo Petroleum Syndicate. Hickling's testimony late in 1938 played a prominent part in allowing the board of arbitration in Trinidad to obtain a partial solution to oil industry labor troubles there.

A. M. MARTINI, who for the past 13 years has held various positions with Bell Oil & Gas Company, the last of which was general manager of Bell General Pipe Line Company of East Texas, has joined Finston and Company as vice president in charge of operations in Texas, Arkansas, Louisiana and New Mexico.

JACK PUGH, production superintendent for the Sun Oil Company, and Jack Maens, safety director, left last week for headquarters in Dallas after checking activity in Kentucky, Indiana and Illinois.

FRANK PHILLIPS, chairman of the board of Phillips Petroleum Company, was named official father of the cadet corps at Culver Military Academy, Culver, Indiana, where his grandson, John Phillips, Jr., is a cadet.

W. R. WELLS, C. H. Wells and E. O. Williams have organized the Big Four Petroleum Company to engage in Illinois development. Headquarters have been established at 6622 Kimbark Avenue, Chicago.

R. H. B. KER and General Victor W. Odlum last week were re-elected president and vice president of Home Oil Company, Ltd., when shareholders of the firm held their annual meeting in Vancouver, British Columbia. Five new directors were named to the board of the company, which is active in Alberta oil development. They are Herbert Greenfield, H. R. Milner, K. C., M. M. Porter, K. C., and R. W. Ward, all of Calgary, Alberta, and Lionel Baxter, of Winnipeg,

BRIAN GROVER, formerly in Iran with Anglo-Iranian Oil Company, now holds the post of drilling engineer with African and European Investment Company in Butiabi, Uganda, Africa.

FREDERICK G. CLAPP, consulting geologist of New York City, has returned to his office after a tour of six weeks through the Mid-Continent and Southwest United States.

A. BEEBY THOMPSON, geologist, is back in London after an absence of five months in Arabia, Somaliland, Greece and India.

A. H. CHAPMAN, manager of Anglo-American Oil Company, has moved from London to Edinburgh, where the new headquarters of the company's production department is located.

E. J. SICK was re-named president of Calina Oils, Limited, Alberta operating company, when shareholders held their annual meeting last week in Calgary. Other officers are I. N. Wilson, secretary, and A. Ripley, J. C. Malone, F. W. Sheppard, A. G. McKinnon, J. W. H. Millican, E. G. Hanson, Fred Sick, Jr., and W. Hutton, directors.

L. G. E. BIGNELL, secretary of the Engineers Club of Tulsa, addressing the Mid-Continent Royalty Owners Association last week, declared the demand of the army and navy for an additional 800,000 barrels of oil a day in the event of a war would materially boom the industry which is now supplying about 3,500,000 barrels a day.

R. P. BOLTON, in charge of European exploitation for Standard Oil Company of New Jersey, has transferred headquarters from Bucharest to The Hague.

CAPTAIN J. A. GOODWIN, managing director of Trinidad Consolidated Oilfields, is in the colony with A. P. Catherall, auditor, to make a report on the company's activities there.

A. VAN HAMMERSTEIN, operator of McMurray, Alberta, was in Winnipeg, Manitoba, last week.

JOHN LIVINGSTON, operator of Houston, was in Evansville, Indiana, last week looking over activity in the tri-state area of Indiana, Kentucky and Illinois. His brother, Julius, is currently active in the southern Illinois basin area.

W. W. DAMRON has returned to his home in Owensboro, Kentucky, following treatment at the Mayo Clinic at Rochester, Minnesota.

R. I. CLANCEY, president of Plains Petroleum Corporation, Ltd., is the sole holdover director of the company, active in Alberta oil development, as a result of a shareholders meeting in Toronto last

week. New directors are Max Haas, Russell Whalen, J. P. Manley and John Hess.

O. L. RAY, G. C. Hodson and D. L. Scott last week organized the Marathon Drilling Company to engage in the Illinois development program. Headquarters have been established at 120 South Locust Street, Centralia.

W. G. SKELLY, president of Skelly Oil Company, last week told the annual convention of the Oklahoma Press Association that there are 65,000 people employed in the petroleum industry in that state receiving in wages $90,000,000 yearly.

EDWIN C. HENNING, George H. Falthaus, Adolph Wintner, Norbert Kahn and William F. Lacy last week organized the Hoozier Star Oil Corporation as an Indiana corporation with headquarters at Evansville.

CLAY TALLMAN, on reaching the age of 65 on May 7, retired as general attorney for the Stanolind companies at Tulsa. He is being succeeded by Donald Campbell, former assistant general attorney.

BOB GARLAND, head of Arab Petroleum Company, left Evansville, Indiana, last week for California, where his family is spending the summer.

A. POLLOCK FAICKNEY, technical director of South African Torbanite Mining and Refining Company, recently arrived in South Africa from London. Faickney recently was appointed a director of British Burmah Petroleum Company.

DR. JOHN VERNON HARRISON, geologist with Anglo-Iranian Oil Company, has been awarded the Gill Memorial of the Royal Geographical Society in recognition of his work in southern Iran and in Central and South America. Dr. Harrison is now at Oxford University.

DONALD B. GILLIES and A. B. Parsons, president and secretary of the A.I.M.M.E., were honored by a banquet given May 11 in Houston's Rice Hotel by the Gulf coast section of the Institute. The president and his party, who are making a national tour, arrived in Houston from College Station, where they appeared before the student A.I.M.M.E. chapter of Texas A. & M. College.

APPALACHAIN METER SCHOOL COMMITTEE HOLDS MEETING

A meeting of the Program Committee of the Appalachian Gas Measurement Short Course was recently called at the University of West Virginia in Morgantown, for the purpose of developing plans for this year's meeting. The committee members shown in the accompanying photo are as follows:

Left to right, front row, seated: Ray Hitchman, Superintendent of Gas Measurement, United Fuel Gas Company, Charleston, W. Va.; J. E. Overbeck, Gas Measurement Engineer, Columbia Engineering Corporation, Columbus, Ohio; J. R. Sproat, Pittsburgh Equitable Meter Company, Pittsburgh, Pennsylvania; A. M. Hutchison, Superintendent Gas Measurement, Ohio Fuel Gas Company, Columbus, Ohio.

Back row, standing: C. H. Whitwell, Superintendent Gas Measurement, Equitable Gas Company, Pittsburgh, Pa.; R. O. Borden, American Meter Company, Pittsburgh, Pa.; J. W. Sweeney, Carnegie Natural Gas Company, Mannington, West Virginia; A. F. Kraus, Superintendent Gas Measurement, People Natural Gas Company, Pittsburgh, Pa.; H. J. Wagner, Gas Engineer, Public Service Commission of West Virginia, Charleston, West Virginia; W. A. Staab, Professor, School of Mines, West Virginia University, Morgantown, West Virginia; G. R. Spindler, Director of Extension Courses, West Virginia University, Morgantown, West Virginia; B. P. Stockwell, Natural Gas Engineer, Public Service Commission of West Virginia, Charleston, W. Va.

As previously announced, the dates for this year's meeting are August 21, 22 and 23. It is expected that the 1939 school will attract an even larger registration than the 300 present last year when this, the first eastern meeting of its type, was inaugurated.

W. A. KIRKLAND, vice-president of Houston's First National Bank, addressed the Houston Geological Society at its weekly luncheon May 11 on "Oil Loans."

W. B. DUNCAN, Shawnee, Oklahoma, Mid-Continent superintendent for Houston Oil Company of Texas, was in Houston last week.

LIONEL HAWKINS, Louisiana independent operator, was in Houston from Shreveport last week.

GEORGE ECHOLS, Houston producer, has flown to Chicago for a short visit.

HAROLD L. SULLIVAN, of Tulsa, Oklahoma, vice-president of Loffland Brothers, drilling contractors, was in Houston May 8.

J. R. BARBE, with Deep Rock Oil Company in Tulsa, Oklahoma, was in Houston last week at the newly opened Deep Rock offices.

SOLOMON BRONSTEIN, Frances Hellrich and Arlene Bronstein last week incorporated the Wana Oil Company in the Vanderburgh County recorder's office at Evansville, Indiana.

JOHN P. ROBERTS, Wichita, who resigned recently as assistant managing director of the Kansas Independent Oil & Gas Association, has joined the staff of the Kansas Oil and Gas Conservation Commission.

G. H. SMITH, Toronto, president of Imperial Oil Company, Ltd., last week was re-elected to the directorate of Dalhousie Oil Company, Alberta operating company. Other directors elected are Alexander Hannah, J. H. McLeod, N. J. Christie, A. C. Newton and S. F. Heard.

MASON C. LYONS, Vickers Petroleum Company, was named president of the Petroleum Accountants Society of Kansas last week when the organization held its annual meeting at Wichita. He succeeds J. C. Dial, Aylward Production Company, who continues as a director. Other officers named are Louis H. Grieb, accountant, first vice president; Louis Potucek, Hartman-Blair, Inc., second vice president; I. A. Lange, Pryor & Lockhart, Inc., secretary-treasurer, and J. B. Ogeltree, Magnolia Petroleum Company; D. W. Watson, Yankey Stearns, C. C. Chapin, Winkler-Koch Engineering Company, and C. A. Elmborg, El Dorado Refining Company, directors.

DIED:

ROBERT W. WYNNE, Palestine oil operator, was killed May 4 in an auto accident on the Dallas-Houston highway near Centerville, Texas.

CLIFFORD E. HARRIS, 68, oil operator and former head of the Arkansas Department of Conservation, died at Centralia, Illinois, May 6 of pneumonia which developed following an automobile accident near Mount Vernon. A former member of the Mississippi legislature, his body was returned to Charleston, Mississippi, for burial.

THE WEEK'S NEWS SUMMARIZED

Legislation

Michigan last week joined the ranks of states having oil conservation laws, when Governor Dickinson signed the act nine days after it reached his desk. The measure becomes effective at once, but probably cannot start functioning before June 1. The state's law has been described as a "stream-lined version of the model New Mexico act." Administration duties are vested in the State Conservation Commission, a non-political body. An advisory board of six members is to be appointed, three members of which must be independent companies or opeartors. The law provides for proration of production to prevent waste or limit output to market demand, for fixing of drilling units to stop unnecessary drilling, and for the collection of one-eighth of one cent per barrel. Waste includes underground, surface and market waste. A proration floor of 100 barrels per well per week for a well producing from less than 1000 feet is fixed, with the base allowable increasing 10 barrels per well per week for each additional 100 feet in excess of this level.

State regulation of the oil industry was asked by the Independent Oil Operators Association of Illinois last week. The association recommended (1) classification of all pipe lines as common purchasers and equally taking from all wells, (2) proration of each field as a unit, with greater daily production where wells have greater productivity, (3) the drilling of but one well on any tract less than 10 acres, but limitation of production in accordance with regular spacing plan used in the particular pool, (4) the placing of a minimum restriction of 50 barrels per well, (5) filing of logs of each well with the state geological survey, and (6) proper plugging of wells.

Courts

The federal government's prosecution of major oil companies and oil company officials, which started in 1936 at Madison, Wisconsin, reached the U. S. Supreme Court last week. Department of Justice attorneys were seeking an order to direct Judge Patrick Stone to vacate his order that dismissed charges against one company and 10 company officials. A review of a decision of the Seventh Circuit Court of Appeals, upholding the jurist's action, was asked.

The Texas Supreme Court has held that Humble Oil & Refining Company is not a public utility because it produces natural gas for resale to another company, and therefore the concern can fix its own price for the gas. However, the court held that the commission had a right to inquire into the price public utilities paid for gas purchased from the company.

Markets

Further improvement in the gasoline market occurred last week, as tank car prices at Mid-Continent refineries advanced another ⅛ cent per gallon, and a like increase was posted by resellers in the Middle West. However, the new gains still left prices about ¼ cent a gallon under a year ago.

Gasoline prices have been on the upgrade for a month, stimulated by the advent of the heavy consuming season. However, tank wagon and service station prices have not improved in proportion to tank car postings, and such improvement must be forthcoming if present levels are held.

With crude output exceptionally heavy in recent weeks, crude prices have not increased, but have been able to maintain their levels despite some unsteadiness.

Statistics

Latest weekly statistics reflected improvement in the refined product branch, as refinery runs declined, and the resulting lower gasoline production permitted a reduction in gasoline stocks. However, crude production continued to increase and oil went into storage.

Crude runs to stills dropped from the year's peak of 3,405,000 barrels to 3,275,000 barrels, and 578,000 barrels of gasoline were taken from storage. These stocks now total 86,216,000 barrels, 3½ percent less than a year ago.

Crude oil stocks increased more than a million barrels, expanding to 278,440,000 barrels, a new peak for the year.

News Section Index

General News 55-66

Oil at the Capitols	56	Market Situation	60
Labor Situation	58	Crude Oil Production	63
Oil in the Courts	58	Pipe Line News	65

World Developments 51

Field Development News 69-89

Arkansas	71	Mountain States	86
California	85	New Mexico	84
Eastern States	74	Oklahoma	70
Illinois	73	East Texas	78
Indiana	74	Texas Gulf Coast	81
Kansas	72	North Texas	76
Kentucky	74	Panhandle Texas	76
Louisiana Coast	82	Southwest Texas	79
North Louisiana	83	West Texas	64
Michigan	87	Wildcat Development Report	88

Oil in the Capitols

Michigan joins ranks of states having conservation statute . . . Illinois independent association asks for state regulation, recommends broad legislation.

Michigan conservation act signed by governor

Michigan's oil industry, still in its swaddling clothes from the standpoint of years, potential production and known reserves, on May 3, came under broad legislation designed to govern future development in the state.

House Bill No. 139, "an oil conservation act," passed the House by a 79 to 8 vote; the Senate by a 24 to 3 vote, and received Governor Luren Dickinson's signature, making it a law, the ninth day after reaching his desk.

No major changes were added to the bill in either the House or Senate with the bill becoming a law substantially in the same form as it was originally submitted.

An immediate effect clause was added in the Senate and approved, unanimously by the House, to give the act immediate effect as against the otherwise "90 day" law.

Actually in effect now, machinery for launching the act probably will not start functioning before June 1 or later. The State Conservation Commission, designated by the bill as the ruling body, will start hearings on May 12 to consider appointments to the 6-man advisory board specified by the new act. Until this board, to be drawn from personnel of the industry, is set up the act will not be officially placed in operation.

Dr. R. A. Smith, state geologist, author of the new Michigan oil law, described the act as a "stream-lined version of the model New Mexico act," and a modified form of bills which died in both the 1935 and 1937 sessions of the Michigan legislature.

A number of factors contributed to the enactment of oil legislation this year in the face of two successive deaths of nearly identical legislative proposals the past two sessions.

Opening of shallow production in the southwestern part of the state in 1938 brought cheap oil into conflict with hundreds of pumper wells in the basin as well as one new 4000-foot flush field. Discovery of shallow production at 1000 to 1900-foot depths in Allegan, Van Buren and Kent counties was followed by unregulated drilling, close spacing and townlot development. Efforts to institute voluntary proration methods, which had proven semi-effective in controling flush districts in the deeper basin area in earlier years, proved unsuccessful in the shallow fields.

On January 1, 1937, the posted price for Buckeye grade crude was $1.42 per barrel. Early in 1938 prices started a downward spiral, and not until April 17, this year, was there any material sign of an up-trend setting in.

From early 1938 to April, 1939, prices fell from $1.26 in central Michigan to as low as 68 cents for 4000-foot production in the Freeman district, Clare County. First official postings for Allegan grade crudes in 1937 were $1.26 per barrel. Flooding of markets in 1938 sent posted prices to 63 cents per barrel, and an estimated 15 to 35 percent of the Bloomingdale production its first 8 months went on the market for as low as 40 to 50 cents.

Best figures available indicate that dollar oil is essential for profitable operation in Michigan, and few companies have been able to show a profit over a period of years on dollar oil in the central part of the basin. The biggest average acre recovery so far found in the central part of the basin was in Porter-Midland County, which has recovered just over 7000 barrels per acre. The average of the leading pools runs from 3500 to 5500 per acre.

Recovery in the shallow fields of southwestern Michigan is not expected to average as a whole much better than 3500 to the acre. The Salem field, Allegan County, which produces from 1600 feet, now in its third year, had produced 1,409,840 barrels to March 1, 1939, for a recovery of 1382 barrels per acre. The field is about 94 percent on the pump. The Bloomingdale field, one year old in August, this year, produced 1,399,809 barrels its first eight months for an acre recovery of 2090 barrels.

Administration of the act is vested in the State Conservation Commission, a non-political body, which now has lands, fish, game, forests, etc., under it. The act specifies the director of conservation as the supervisor of wells, "who shall designate with the approval of the commission such suitable assistants . . ." necessary to administer the act. The supervisor is J. P. Hoffmaster, who is an appointed official by the commission.

The act provides that the supervisor "after conference with and recommendations by oil and gas producers or operators or their representatives, shall, subject to approval by the commission, appoint six persons who shall constitute a board to be known as an advisory board." Membership of the advisory board is specified in the act as three members chosen from independent companies "and three other members shall be chosen from oil and gas producers or operators or managing agents or representatives whose ownership, production or operations are chiefly interstate and who directly or indirectly through controlled subsidiaries are engaged as actual oil producers in five or more states, including Michigan."

Members on the advisory board are required to have had "at least five years of practical or technical experience," and have been a resident of Michigan not less than two years. Terms of advisory board members are for three years, on the "staggered plan."

As suggested by the name, powers of the board are technically only advisory board members are for three years, on the "staggered plan."

As suggested by the name, powers of the board are technically only advisory, however, the act is so written that the board is an integral part of the administration. Powers of the supervisor of wells in every important duty of administration read "that he shall . . . after consulting with the board and considering its recommendations . . ." As for example Section 13, "Whenever, to prevent waste, the total allowable production for any field or pool in the state is fixed in an amount less than that which the field or pool could produce if no restriction were imposed, the supervisor, after consulting with the board and considering its recommendations, shall prorate or distribute on a reasonable basis the allowable production among the producing wells in the field or pool, so as to prevent or minimize reasonably avoidable drainage from each devel-

Illinois independents ask state regulation

Independent Oil Operators Association of Illinois last week called for state regulation of the industry by a commission of three members, including the director of the state geological survey and a representative of the state agriculture department. The proposal was advanced by G. H. Blankenship, Centralia operator and a director of the association.

The association's recommendations, Blankenship said, contained these proposals:

1. Classification of all pipe line companies operating in the state as common purchasers who would be required to take equally from all wells in the pools served.

2. Filing with the state geological survey a log showing the results of each drilling operation and the depths of each formation and any other pertinent information or data on coal or other minerals.

3. Proration of each field as a unit, with greater daily production where wells have greater productiveness and a minimum restriction of 50 barrels per well.

4. Authority would be given to drill not more than one well on a tract of less than 10 acres, but production would be limited in accordance with the size of the tract as compared to the regular spacing scheme in effect in the particular pool. No well, however, could be held to an allowable of less than 50 barrels per day.

5. Plugging of wells to protect coal seams, other oil formations and stream pollution.

Production control was advocated by Blankenship as a means to end price cutting by small refineries. He charged that most operators, pipe line companies and refineries were selling or buying oil below posted prices. Major companies, he said, favor proration as a means of forestalling federal control of the industry.

oped area which is not equalized by counter drainage . . ." And again in the same section the act reads, "To prevent the drilling of unnecessary wells the supervisor, after conference with and recommendation by the board, may fix a drilling unit for each pool, such being the area which may be efficiently and economically drained and developed by 1 (one) well, except in those pools which, prior to the effective date of this act, have been developed to an extent and where conditions are such that it would be impracticable or unreasonable to require a drilling unit at the present state of development."

The exception to when the supervisor may act without first consulting the board is provided in Section 16 in an emergency rule clause. This section enables the supervisor to "promulgate and put in effect emergency rules, regulations or orders without a public hearing that may be necessary to carry out the provisions of this act; provided, that such emergency rules, regulations and orders shall in no event remain in force and effect more than 21 days."

The conservation commission is established as an appeal board by the act, to which either the advisory board or an individual may take an appeal from an order of the supervisor which is deemed unreasonable or unwarranted, with this appeal not precluding a final appeal in the courts.

The supervisor of wells is the chief administrator of the provisions of the act. Attempts to have this modified or restricted were repeatedly made by numerous operators in the legislature. Dr. Smith, author of the bill, and the association's legislative committee, however, argued that to tie the hands of the supervisor would result in an act that could not be flexible enough to offer efficient administration. They contended that provisions requiring the supervisor to consult the advisory board removed the "dictatorial" claims of opponents.

The major provisions of the act include the power to determine and prevent waste, to prorate production either to prevent waste or to limit output to the market demand, to fix drilling units, to collect a one-eighth of one cent per barrel "privilege fee" on oil produced and sold.

The act defines "underground" waste as "inefficient, excessive, or improper use or dissipation of the reservoir energy, including gas energy or water drive . . . the locating, spacing, drilling, equipping, operating or producing of any well or wells in a manner to reduce or tend to reduce the total quantity of oil or casing-head gas ultimately recoverable from any pool . . . unreasonable damage to underground fresh or mineral waters, natural brines or other mineral deposits . . ."

"Surface waste" is defined as unnecessary loss of casing-head gas, evaporation, seepage . . . and especially such loss or destruction incident to or resulting from the manner of spacing, equipping, operating, or producing well or wells . . ."

"Market waste" is defined as embracing the production of oil in any field in "excess of the market demand as defined herein," "Market demand," is defined as "the actual demand for oil from any particular pool or field for current requirements for current consumption and use within or outside the state, together with the demand for such amounts as are necessary for building up or maintaining reasonable storage reserves of oil or the products thereof, or both such oil and products and shall not be less than the actual purchasing commitments for oil from such pool or field."

The clause on market demand originally was written in the bill as "reasonable market demand," but "reasonable" was dropped out on the insistence of the Independent Refiners' Association, whose representatives argued that it was a price fixing measure enabling restriction of production to force prices above current market demand levels.

The other chief amendment to the bill was in the establishing a floor for proration. Under the act, as passed, no proration order may be issued which will restrict production below 100 barrels per well per week for a well producing from a depth of 1000 feet or less; and that the base allowable production shall be increased 10 barrels per well per week for each additional 100 feet of depth greater than 1000 feet—provided, that the well is prorated on the basis of a full drilling unit, and/or that "such allowable production is or can be made without surface or underground waste."

The original bill made no mention of a proration floor. It was written in on the insistence of southwestern Michigan operators.

Other general provisions of the law include the power to require certificates of clearance or tenders in connection with the transportation of oil or gas, to require permits, well logs, and plugging reports, seizure of oil determined produced or transported contrary to the act, to require operation of wells with efficient gas/oil ratios and to fix such ratios, to regulate shooting and chemical treatment of wells, regulate secondary recovery methods, to regulate brine disposal.

The act provides a penalty for violation of up to $1000 and three years imprisonment or both.

"Fair practice" bill is introduced in Pennsylvania

A bill to "help the oil industry to regulate itself," was introduced in the Pennsylvania legislature last week by Senator Bernard B. McGinnis, Democrat, who served on a legislative commission that conducted an investigation of the industry during the past two years.

The measure, which observers predict will not gain passage this session in the face of administration opposition to any form of control placed on the state's oil industry, would create a permanent five-member board to cooperate with an advisory board to be chosen by the industry in setting up "a program of fair practices in the production, refining and distribution of oils and gasoline in this commonwealth."

Described as being patterned after the federal fair trade practices act, the bill charges the board with "making a careful, impartial and thorough investigation into the operation of the oil industry within the commonwealth and to regulate said industry with the purpose of inviting, aiding and inducing the oil industry to correct the abuses inimical to the orderly conduct of business and the public good and to make reports of its findings and recommendations."

Illinois senate approves five oil regulation bills

While Rep. O. P. Tuttle, Republican of Harrisburg and chairman of a special committee of the Illinois legislature named to conduct an inquiry into the state's oil industry, was dictating a report covering findings and legislative recommendations of his group, the senate oil and gas conservation committee last week approved five bills designed to govern phases of the industry.

Chairman Tuttle did not say when his report, which was to have been submitted to the legislature by April 30, would be ready, but indicated it should be completed within a few days.

Measures approved by the senate committee last week are:

SB 82, to require persons drilling any well for oil or gas or engaged in core well drilling to file with the department of mines and minerals monthly a complete daily log of such drilling operations, setting forth details concerning such operations. The report would be open for inspection by the owner of the land and owners and holders of royalty interests in oil and gas produced from the land. It would also provide that in the event any oil or gas is discovered in paying quantities on a leasehold of more than 10 acres the producer shall commence and pursue with reasonable diligence the drilling of another well upon each additional 10-acre tract covered by the lease.

SB 83, to provide that if oil and gas is discovered in paying quantities on an adjoining leasehold and the products therefrom are taken and marketed and such well is within 200 feet of another leaseholder's property line, then within 30 days after written notice has been given him he shall begin to drill an offset well to each of such wells so located. Failure to carry out provisions of the act would make the lease void, but the measure would not apply to existing leases or wells drilled prior to enactment of the measure.

SB 192, to provide that it shall be the duty of the driller to keep a log of all wells drilled in any working or abandoned coal mine, with copies to be filed with the state department of mines and with the state geological survey, to provide for filling of abandoned wells, placing supervision under the department of mines.

SB 195, to provide liens for contractors, subcontractors, material men and laborers for work performed and materials furnished in digging, drilling, building, erecting, completing, operating or maintaining oil wells and pipe lines.

SB 255, to regulate storage, transportation and purchase of petroleum and petroleum products. It would prohibit any storage utility from discriminating between or against its patrons in regard to facilities furnished or services rendered or rates charged under the same or similar circumstances in the storage of crude petroleum. Bonds not exceeding $25,000 would have to be filed with the state to guarantee that the storage utility would observe the provisions of the law and the rules of the Illinois commerce commission in the administration of the act, that the utility will exercise ordinary care in such storage entrusted to it and guarantee the classi-

fication, measurements and grades made by such utility under its authority. The bill would also authorize the commission to hold hearings as to rates now charged and to reset them on existing and operating lines in accordance with the act and by taking into consideration the past earnings of the carrier. A common carrier or pipe line would be prohibited from abandoning any of its connections or lines except with the consent of the commission.

Texas passes vacancy racketeering bill

The Texas Legislature last week passed the bill which was to end vacancy racketeering in Texas. Probably no more conflicting or confusing piece of legislation has ever been approved and sent to the Governor, and because of these conflicts, Senator A. J. Weinert who sponsored the bill in the Senate, has asked the Governor to veto the measure.

Neither oil companies who wanted to take care of their vacancy problems, or vacancy hunters who hope to profit by finding tracts with defective titles, were satisfied with the results. It was estimated that there were some 50 conflicts within the bill itself.

The bill provides that state leases in the future shall be handled through a Land Board consisting of the Gov-

[*Continued on Page 65*]

Oil in the Courts

Department of Justice's fight to have order dismissing Madison trust defendants vacated carried to Supreme Court . . . Humble wins gas rate case.

Madison trust suit reaches Supreme Court

The federal government's prosecution of major oil companies and oil company officials, started with grand jury indictments at Madison, Wisconsin, in 1936, reached the United States Supreme Court last week when department of justice attorneys sought an order directing Federal Judge Patrick T. Stone to vacate that part of his order of July 19 in which he dismissed charges against one company and 10 company officials. A review of a decision of the seventh circuit court of appeals decision upholding the Madison jurist's action was asked. The appeals court refused to grant the government's plea for a writ of mandamus to compel Judge Stone to vacate the order.

Judge Stone issued the order six months after a federal court jury of 12 central Wisconsin farmers and small-town businessmen found 16 companies and 30 oil company officials guilty of conspiracy to violate the federal anti-trust laws in operation of buying programs in the Mid-Continent and East Texas fields for the alleged purpose of artificially raising prices.

In the same order, he granted new trials to three companies and 15 individuals, and upheld the jury verdict as against 12 companies and five individuals. Counsel for companies and company officials in the last group have taken an appeal to the circuit court at Chicago.

The Globe Oil & Refining Company of Kansas is the company concerned with last week's action before the Supreme Court. Individuals are Henry M. Dawes, Chicago, president of The Pure Oil Company; Jacob France, Baltimore, president of Mid-Continent Petroleum Corporation; Dan Moran, Ponca City, president of Continental Oil Company; Frank Phillips, Bartlesville, president of Phillips Petroleum Company; Edward G. Seubert, Chicago, president of Standard Oil Company of Indiana; W. G. Skelly, Tulsa, president of Skelly Oil Company; Allan Jackson, Chicago, vice president in charge of sales, Standard Oil Company of Indiana; Charles L. Jones, New York, vice president in charge of domestic trade department, Socony-Vacuum Oil Company; Arthur V. Bourque, Tulsa, secretary and treasurer of Western Petroleum Refiners' Association, and Byran S. Reid, Chicago, general manager of Chicago Division, Socony-Vacuum Oil Company.

Court holds Humble not a public utility

An important decision was handed down by the Texas Supreme Court last week holding that Humble Oil & Refining Company is not a public utility by reason of the fact that it produces natural gas for resale to M & M Pipe Line Company.

In fixing a rate for the M & M Pipe Line Company to charge, the railroad commission attempted to reduce from eight to five cents the price paid the Humble for natural gas. The commission based its jurisdiction on the fact that the contract between Humble and M & M made a joint utility enterprise of the operations.

The court found that there was no basis for considering the Humble as a public utility or as a part of a public utility. However, in the same opinion the court stated that the railroad commission had the power and duty to inquire into the price which a public utility such as M & M paid for its gas, and if this price was found to be too high, the commission need not allow for the full price in fixing gate rates. The commission, however, is without authority to fix the price for which a producer shall sell his gas.

Labor Situation

Company unions thrown overboard by NLRB decisions handed down during week. Trial of 99 C.I.O. strikers at Mid-Continent refinery starts in Tulsa.

NLRB denies bargaining crafts agency to A. F. of L.

The National Labor Relations Board, in Washington, May 5, denied an American Federation of Labor request that boilermakers and welders of American Petroleum Company, Houston, Texas, be designated as a craft bargaining unit separate from other company employees. The board directed a secret ballot election among the company's employees to determine whether they wanted to be represented by the C.I.O.'s Oil Workers International Union. At the same time the board ordered the company to disband the Employee's Federation on the ground the company had dominated and interfered with the federation and dictated its policies

As reason for rejection of the A.F.L. petition the NLRB said that there was no evidence that the company boilermakers and welders had ever attempted to bargain with the employer, or that any of such employees had ever joined the A.F.L. or designated it to represent them.

Allegations that the company refused to bargain with the C.I.O. oil workers union were dismissed in the absence of proof that the union represented a majority of the workers. No date for selective election was set.

Oil firm told to treat with C.I.O.

The National Labor Relations Board, in Washington, May 10, ordered Continental Oil Company to disband the independent association of its Glenrock, Wyoming, refinery employees, and desist alleged discouragement of the activities of the Oil Workers International Union, a C.I.O. affiliate. The board also ordered the company to bargain collectively with the C.I.O. union at the Glenrock refinery, the Big Muddy field, and at the Salt Creek,

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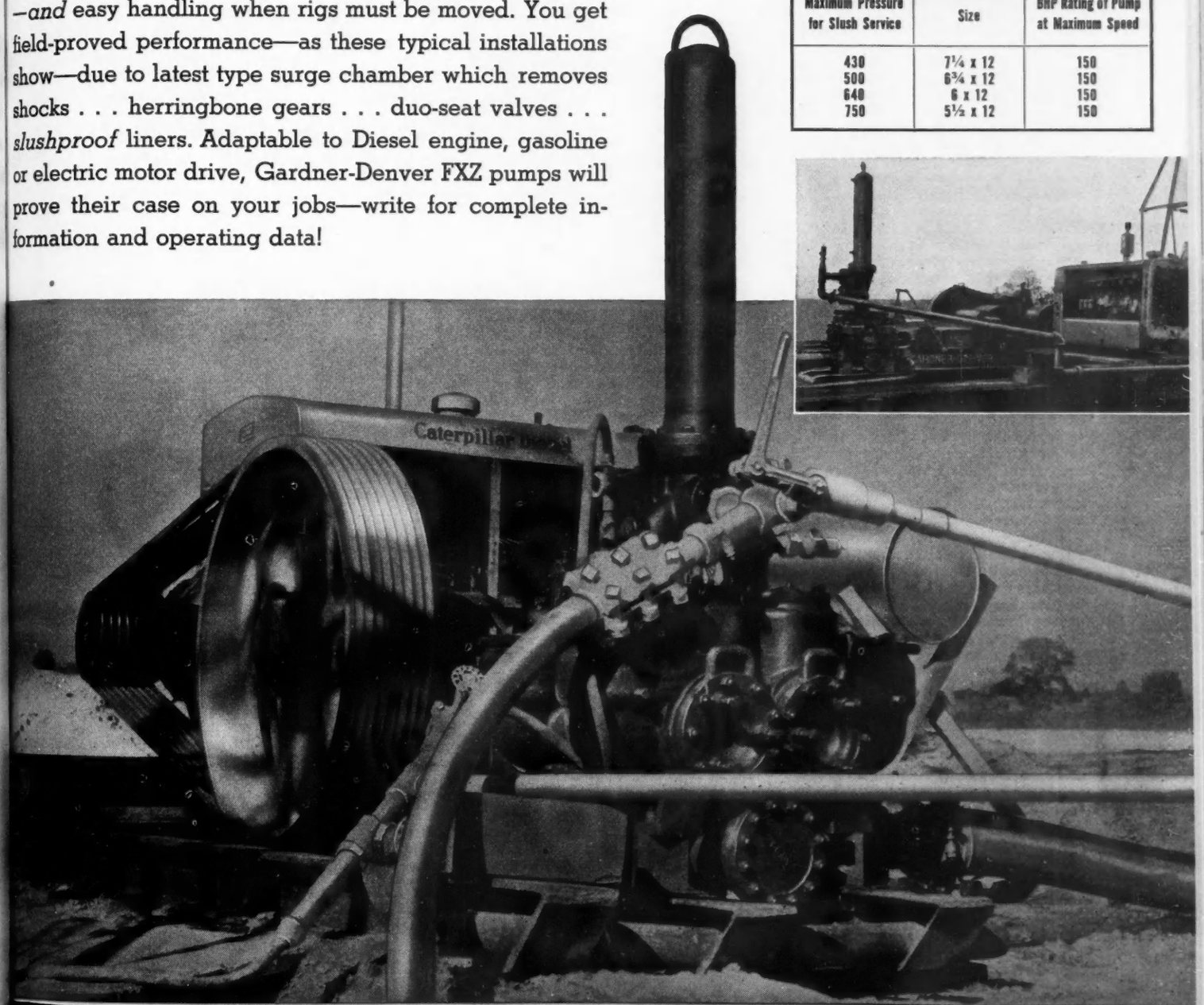

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Wyoming, refinery, providing C.I.O. wins the labor election to be held there within 30 days. The order commanded reinstatement at Glenrock and Big Muddy of two employees who were alleged to have been transferred to abate C.I.O. activities. The board dismissed a charge that the company had refused to bargain with the union at the Salt Creek field.

N.M.U. and tanker fleet owners seek to close strike breach

Representatives of the National Maritime Union and officials of four oil companies agreed May 8 in New York to resume negotiations for a new labor contract. A strike called against the companies three weeks ago has hampered tanker movements of oil to some extent, but in the main has been ineffectual, since more than 20 tankers of the affected companies have sailed since the inception of the strike, some with partial and others with entire replacement crews. Firms affected are the Standard Oil Company of New Jersey, Socony-Vacuum Oil Company, Tide Water Associated Oil Company, and C. D. Mallory & Company.

The unions demand that all striking seamen who have been replaced by non-union labor be re-instated. However, officials of both the Standard and Socony-Vacuum companies have indicated that seamen hired since the strike began will be retained. Exclusive hiring through union-controlled hiring halls, a demand that the companies have so far firmly refused to meet, will be the subject of the renewed negotiations.

Texas grand jury probes strong-arm strike methods

Spurred on by rumors of a federal survey of labor conditions in the Houston area, a Harris County grand jury last week pushed its investigation of certain incidents of violence that have arisen from the district's numerous labor disputes in the past few months.

Instigated by the beating of two Crown Central Petroleum Company employees by men alleged to be C.I.O. members doing a little "recruiting," and the mauling of an N.M.U. picket by former Texas peace officers, the investigation has been broadened to include all assaults incident to recent labor troubles.

A parade of witnesses filed through the jury room all week long. Dozens of witnesses testified to the general circumstances surrounding the recent strike at Crown Central's Houston refinery, and the picketing of Houston area tanker docks and filling stations by striking seamen of the N.M.U., as well as to the specific instances in which one side or another has resorted to violence. Run concurrently with the petroleum probe was an investigation of cafe and dairy workers disputes that have culminated in assaults, gun-pulling, and window smashing.

It was rumored that several investigators from an unnamed federal agency were in Houston to make a detailed report on labor conditions in the area. Some observers saw a connection between the rumored investigation and a recent statement by Martin F. Dies, chairman of a congressional committee investigating un-American activities, who pointed to Houston as a key spot in the plans of destructive outside influences.

Mass trial of Mid-Continent strikers begins in Tulsa

The wholesale arraignment of 99 C.I.O. members, accused of unlawful assembly attendant to their strike at Mid-Continent Petroleum Corporation's West Tulsa refinery, began May 9 in the Tulsa district court. Each juror was furnished a list of the defendants to facilitate note-taking. The state announced it would call as one of its witnesses J. L. Coulter, International Oil Workers Union president. Coulter's name was indorsed by Common Pleas Judge Krit Logsdon over the protest of J. D. Lydick, chief defense counsel.

A defense plea for dismissal of the charges was denied, but six individual defendants were discouraged because of vague identification.

Rig builders strike in Oklahoma

Derrick construction in Pottawatomie and Seminole counties, Oklahoma, was interrupted last week because of labor trouble. The C.I.O. affiliated rig builders union is said to be attempting a new membership drive.

Market Situation

Mid-Continent and Middle West wholesale gasoline market improves; refinery prices continue lower; crude still going to storage; outlook brightens

Better gasoline prices feature market situation

Further improvement in the wholesale gasoline market occurred in the past week, tank car prices at Mid-Continent refineries having been advanced generally another ⅛ cent a gallon, and a like increase having been put into effect by resellers in the Middle West.

Supplies were closely held by refiners, and some plant owners were buying to supplement their own production.

The new gains in the wholesale gasoline prices followed improvement of ⅛ to ¼ cent a gallon in the several preceding weeks.

However, refinery prices still are about ¼ cent a gallon lower than a year ago.

Retail Prices Still Low

So far, tank wagon and service station prices have not improved in proportion to the advances in refinery prices, and such improvement will be required if the latter are to remain at present levels or further advance.

Dealer tank wagon prices are practically unchanged from a month ago and are about ¾ cent a gallon lower than at this time last year.

The gasoline market has been on the upgrade for over a month, having been stimulated by the advent of the season of heavy consumption, although it faltered in late April, apparently because of dangerously high crude oil production and refinery runs.

Crude Oil Situation

The crude output has continued exceptionally large, having risen to a new peak for this year in the week ended May 6, and crude has been going consistently into storage for several weeks, as production could not be absorbed, even with unusually large quantities going to refinery stills.

However, allowables for May apparently will bring a fair balancing of crude production with the current market requirements, and consequently, refinery runs in coming weeks may be held down to satisfactory levels.

Although the crude output and refinery runs have been greater than desirable, with the result that normal seasonal withdrawals of gasoline have been prevented, the situation has been aided by remarkably good demand for gasoline. So far this year, the gasoline demand has been running around 6 percent higher than last year.

Crude Market Unsteady

Despite the favorable implications of the gasoline market improvement for the crude markets, the latter have remained unsteady, in the wake of the substantial overproduction of the past six weeks.

The crude market in tanker lots in the Mid-Continent is particularly soft. Virtually no deals are being made on spot stuff, and some dealers fear that the price structure may be impaired unless some relief comes forward shortly. It is reported that East Texas crude prices in tanker lots have sagged to new lows for recent years.

Refinery runs lower and gasoline stocks down

The latest weekly statistics of the oil industry, which covered the week ended May 6, were favorable in so far as they reflected a sharp curtailment of refinery runs, a decrease in gasoline production, and a withdrawal of gasoline from storage. They were unfavorable, however, from the standpoint of the crude oil situation, as crude pro-

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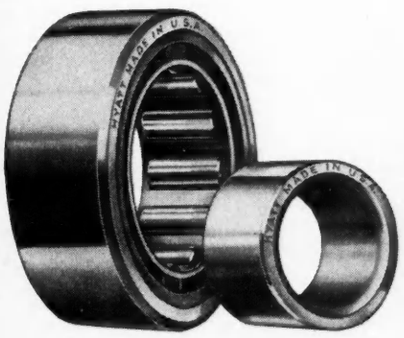
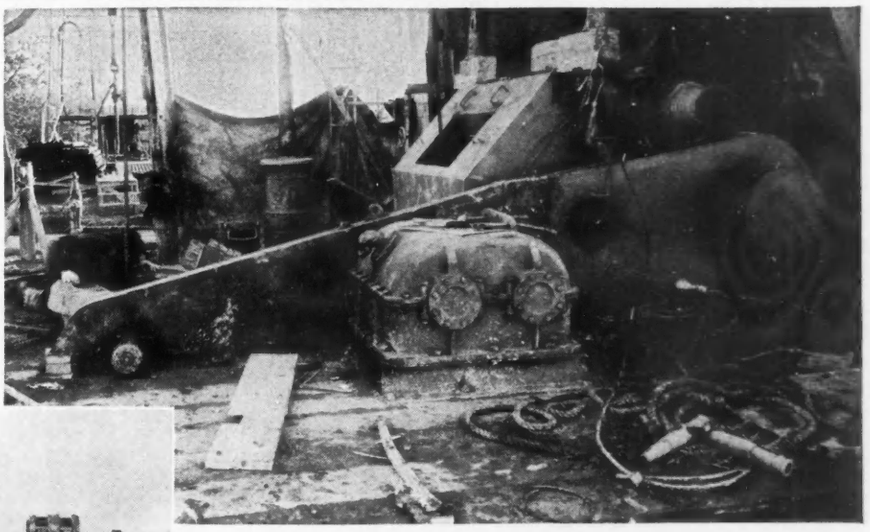
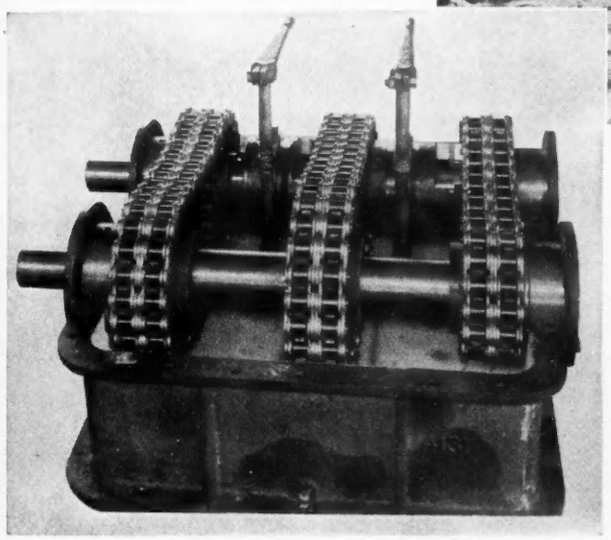




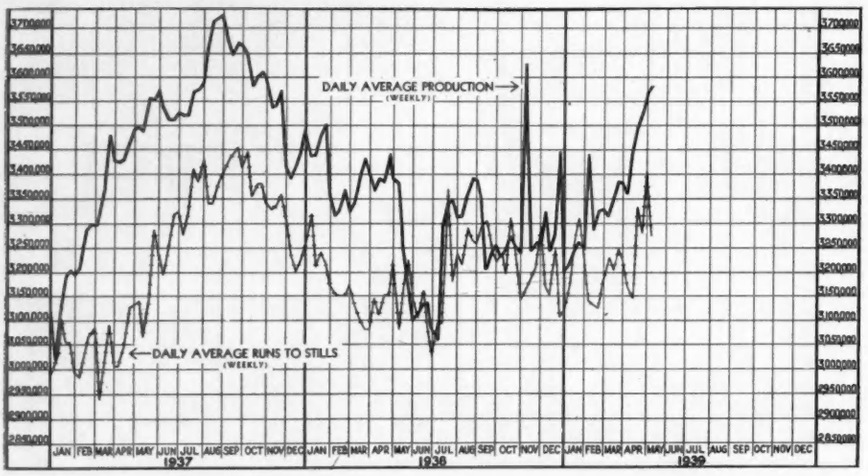


● **GUMBO BUSTER ROTARY DRIVE TRANSMISSION,** another American Well & Prospecting Company product made more dependable with Hyatt Roller Bearings. Above, transmission hooked up to drilling rig. Opposite, transmission with cover removed. The Bridgeport Machine Company is the distributor.

Thousands upon thousands of Hyatt Roller Bearings are in operation in all kinds of drilling machinery and many more are used in all other types of oil field equipment—engines, pumps, pumping units, etc.—Hyatts are everywhere! Designed and built to withstand the strains of punishing loads and speeds, to save on power and maintenance, Hyatts are the preferred bearings for this service. If you are contemplating new equipment, look for Hyatt Roller Bearings and their freedom from bearing wear and care. Hyatt Bearings Division, General Motors Sales Corporation, Harrison, New Jersey; Chicago, Pittsburgh, Detroit and San Francisco.

HYATT *Roller Bearings*

United States Crude Oil Production and Refinery Runs


DAILY AVERAGE PRODUCTION
(WEEKLY)
DAILY AVERAGE RUNS TO STILLS
(WEEKLY)
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1937
1938
1939

duction rose further and crude was forced into storage again.

The United States crude oil production rose about 12,000 barrels, having averaged 3,580,900 barrels daily in the week of May 6, a new record for the year. The output was 5.2 percent larger than in the corresponding week last year.

Crude Runs Reduced

Crude runs to refinery stills were cut back to 3,275,000 barrels daily, from the year's peak of 3,405,000 barrels a day established in the previous week. Despite the reduction, however, the runs were 6.3 percent larger than in the corresponding week last year, when they averaged 3,080,000 barrels daily.

Crude oil stocks were increased over a million barrels in the week ended April 29, latest period for which figures are available, despite the heavy runs of crude to stills in that week, having expanded to 278,440,000 barrels, a new peak for this year. The mounting crude stocks, in the face of large throughput of crude at the refineries, indicated the seriousness of the prevailing overproduction of crude.

Gasoline Output Lower

The cutting back of refinery runs in the week ended May 6 resulted in a reduction also in production of gasoline, which came down to 10,732,000 barrels for the week from 11,168,000 barrels the previous week. The decrease of 436,000 barrels in gasoline production for the week represented a decline of 62,000 barrels in the daily average output.

Gasoline stocks were reduced about the same amount that production was curtailed, having come down 578,000 barrels, to a new total of 86,216,000 barrels. That quantity was about 3½ percent less than the 89,464,000-barrel supply held at the corresponding time last year.

Fuel Oil Stocks

Stocks of gas oil and distillate fuels are about the same now as at this time last year, having totaled 26,167,000 barrels on May 6. This figure is on the new basis of the American Petroleum Institute, including stocks at refineries and at all terminals, in transit, and in pipe lines, and a comparable figure for a year ago is not available, as the A.P.I. at that time did not include the stocks at terminals, etc., except in California. The A.P.I. showed 21,771,000 barrels of these lighter oils on hand May 7, 1938, but nearly 5,000,000 barrels at terminals, etc., outside California indicates the total actually was about 26,500,000 barrels.

Similarly, the figure of 108,597,000 barrels of residual fuel oils in storage May 6 is not comparable with last year's figure, as the latter did not include stocks at terminals, etc., outside California. However, available information indicates that the present stocks of these heavy oils are around 3,000,000 barrels lower than those held a year ago, the A.P.I. (incomplete) figure for May 7, 1938, having been 108,077,000 barrels.

Gasoline tank car prices advance eighth cent more

Price changes in the oil industry's markets during the past week were confined primarily to the increases made in tank car prices of gasoline, crude oil postings having remained generally unchanged, as did the prevailing wholesale prices of most of the refined products aside from gasoline.

Dealer tank wagon and retail prices of gasoline so far have not improved appreciably, despite the several advances made in gasoline tank car prices in the past month.

The tank car prices of gasoline at Mid-Continent refineries and in the marketing areas of the Middle West are ⅛ cent a gallon higher than a week ago for all grades and districts.

Gasoline Prices

U. S. motor gasoline ranged in the Oklahoma market last week about as follows: 62 octane and below, 4⅛ to 4⅜ cents a gallon; 63 to 66 octane, 4⅜ to 4⅝ cents; 67 to 69 octane, 4⅝ to 4⅞ cents; 70 to 72 octane, 4⅞ to 5⅛ cents.

Corresponding prices in the Chicago market were: 3⅞ to 4⅜ cents, 4⅛ to 4½ cents, 4¼ to 4¾ cents, and 4½ to 5⅛ cents.

In East Texas, 60-62, 400 end point

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
August 28, 1937	**3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25, 1937	3,666,300	**3,455,000	307,974,000	†65,620,000	116,472,000	
March 19, 1938	3,433,550	3,080,000	306,380,000	**93,192,000	122,067,000	
March 26	3,405,600	3,080,000	307,557,000	92,858,000	122,969,000	
April 30	3,396,150	3,215,000	307,147,000	91,339,000	21,480,000	106,790,000
May 28	3,098,650	3,150,000	301,583,000	87,946,000	23,619,000	110,696,000
June 25	3,083,900	3,025,000	293,463,000	82,412,000	25,343,000	112,458,000
July 30	3,316,400	3,240,000	288,514,000	76,864,000	27,573,000	116,721,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	29,747,000	117,179,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	31,183,000	119,285,000
October 1	3,231,800	3,235,000	280,852,000	68,602,000	31,614,000	120,145,000
October 29	3,237,500	3,145,000	275,824,000	67,590,000	33,690,000	120,029,000
November 12	3,243,250	3,180,000	273,394,000	67,551,000	34,175,000	120,491,000
November 26	3,260,900	3,295,000	270,563,000	68,628,000	33,749,000	119,885,000
December 10	3,245,100	3,150,000	†269,509,000	68,587,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
January 28, 1939	3,248,250	3,235,000	271,763,000	77,279,000	26,583,000	112,766,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	23,419,000	110,252,000
March 4	3,314,850	3,230,000	272,971,000	85,379,000	22,449,000	109,481,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	21,487,000	107,551,000
April 1	3,358,200	3,170,000	276,119,000	87,277,000	20,802,000	107,091,000
April 22	3,526,700	3,280,000	277,156,000	*87,769,000	21,058,000	105,035,000
April 29	3,568,200	*3,405,000	*278,440,000	86,794,000	§25,844,000	§108,409,000
May 6, 1939	*3,580,900	3,275,000	.....	86,216,000	26,167,000	108,597,000
May 7, 1938	3,382,350	3,080,000	‡307,147,000	89,464,000	§21,771,000	§108,077,000
Change in past year	+5.2%	+6.3%	—9.3%	—3.6%	§+20.2%	§+0.5%

** All time peak. * Peak for 1939. † Lowest for 17 years. ‡ Stocks, April 30, 1938.

§ Prior to week ended April 29, 1939, figures did not include stocks at terminals, in transit, etc., except in California. Such stocks, outside California, included for first time in week of April 29, 1939, consisted of 4,772,000 barrels of gas oil and distillates and 2,769,000 barrels of residual fuel oil.

gasoline was priced generally at 4¼ cents a gallon.

Natural gasoline, grade 26-70, was selling in the Mid-Continent markets, f.o.b. refineries, at 2½ cents a gallon, and sales were reported at the same price f.o.b. Breckenridge, Texas.

Kerosene prices f.o.b. Oklahoma refineries ranged from 3⅞ to 4¼ cents a gallon for the 41-43 water white grade, and from 4 to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3½ to 4⅛ cents and 3⅝ to 4⅜ cents.

Prices of light fuel oils were generally unchanged last week. In the Chicago market range oil was priced from 3⅜ to 4 cents a gallon. The No. 1 white oil was priced from 3¼ to 3⅞ cents, and No. 1 straw from 3¼ to 3½ cents. No. 2 straw was 3⅛ to 3½ cents. No. 3 oil was 2⅞ to 3⅛ cents. No. 5 oils were 57½ to 70 cents a barrel. The No. 6 oil was quoted at 35 to 45 cents.

McMillan paying premium for Smackover crude oil

McMillan Refining Company is paying a 10 cents per barrel premium for Meekin sand crude in the Smackover, Arkansas, field. This is noteworthy when studied in connection with several other crudes in the Arkansas-Louisiana territory, especially at Lisbon, Louisiana.

Crude Production

United States output decreases but still exceeds federal recommendations by 133,945 barrels daily

United States production of crude oil during the week ended May 13 averaged 3,559,145 barrels daily. Abrupt readjustments in Texas held the nation's total at a 24,895-barrel lower level than that for the week preceding, despite considerable gains in Kansas, California, and Illinois. Bureau of Mines estimate of demand for domestic crude was over-run by 133,945 barrels.

Texas Down 51,000

Texas output fell 51,050 barrels from the prior week's average to align with lower allowables and the restored Saturday shut-downs. Production at 1,411,200 barrels daily was 18,123 barrels in excess of state allocation and 5100 barrels over bureau estimate, the smallest margin of that nature for a number of weeks.

California production was pegged at 621,900 barrels as it rose 13,500 barrels over the previous week's daily average. Both state and federal recommendations were left behind by 46,400 and 39,300 barrels respectively.

Louisiana yield was 270,300 barrels daily; a decrease of 4325 barrels from the week prior, but still 6666 barrels over state allowable and 8700 barrels above federal estimate.

Oklahoma production slid to 453,155 barrels daily, 6395 barrels lower than average output for the previous week and 25,155 barrels higher than state allowable although 2645 barrels below the bureau recommendation.

Illinois Over 200,000

Illinois new pools lifted 202,000 barrels to raise the state total to 211,000 barrels; 11,400 barrels more than that of the week prior and 51,300 barrels over federal forecast.

Kansas registered an 8325-barrel gain in moving to the 176,240-barrel mark, where production exceeded state and federal recommendations by 5890 and 23,640 barrels respectively.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (May)	State Allowable in (May)	BARRELS DAILY FOR WEEK ENDED May 13	May 6
TEXAS—				
Texas Panhandle			83,550	74,350
North Texas			78,550	86,100
West Central Texas			29,600	32,350
West Texas			221,000	232,450
East Central Texas			101,500	105,350
East Texas Field			429,000	447,200
South Texas			243,000	257,200
Texas Gulf Coast			225,000	227,250
Total Texas	1,406,100	1,393,077*	1,411,200	1,462,250
CALIFORNIA—				
Long Beach			48,500	49,900
Santa Fe Springs			27,200	27,500
Huntington Beach			31,300	27,600
Dominguez			22,100	20,700
Ventura Avenue			32,900	31,400
Midway-Sunset			51,100	46,500
Kettleman Hills			53,100	53,400
Wilmington			89,600	89,400
Others			266,100	262,000
Total California	582,600	575,500†	621,900	608,400
OKLAHOMA—				
Oklahoma City			99,050	103,050
Seminole Area			112,350	113,875
Fitts			26,000	27,500
Others			215,755	215,125
Total Oklahoma	455,800	428,000	453,155	459,550
LOUISIANA—				
North Louisiana		62,629	76,150	75,675
South Louisiana		201,005	194,150	198,950
Total Louisiana	261,600	263,634	270,300	274,625
ILLINOIS—				
Salem			101,500	100,000
Loudon			50,000	44,600
Other New Pools			50,500	46,000
Old Pools			9,000	8,800
Total Illinois	159,700		211,000	199,400

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (May)	State Allowable in (May)	BARRELS DAILY FOR WEEK ENDED May 13	May 6
KANSAS—				
Burrton-Haven			10,100	9,900
Russell County			21,850	16,915
Silica			10,600	10,690
Others			133,690	130,410
Total Kansas	152,600	170,350	176,240	167,915
NEW MEXICO	115,500	117,100‡	114,850	111,850
EASTERN STATES—				
Pennsylvania Grade			70,950	71,250
Others, Eastern			16,350	16,275
Total Eastern States			87,300	87,525
MOUNTAIN STATES—				
Wyoming	64,200		58,950	58,950
Montana	16,100		14,750	15,850
Colorado	5,200		3,650	3,450
Total Mountain States	85,500		77,350	78,250
MICHIGAN	50,000		63,000	61,050
ARKANSAS	52,900	54,672	54,150	55,450
KENTUCKY	15,800		16,600	15,725
INDIANA	2,900		2,100	2,050
Total United States	3,425,200		3,559,145	3,584,040

* Daily average considering 2 Saturday and 4 Sunday shutdowns, water exemptions, and exemption at Rodessa.

† Recommendation of Central Committee of California Oil Producers.

‡ Includes 4,000 barrels export allowance.

U. S. oil supply adequate says Institute official

Dealing effectively with a sufficiency of oil, rather than a shortage, is the present and prospective problem of the petroleum industry, W. R. Boyd, Jr., of New York, executive vice president of the American Petroleum Institute, told the New Mexico Oil Conference at Albuquerque May 6. Speaking at the luncheon session of the conference, which was sponsored by the University of New Mexico, Boyd asserted that the nation's petroleum reserves now are the greatest in history. He urged that the industry be permitted to enjoy the cooperation of government in promoting petroleum conservation and orderly operations rather than be subjected to political control. On the basis of results, he declared, government could have contributed no more to public welfare than has the petroleum industry.

"If we view the situation from the standpoint of results," said Boyd, "there is a real question as to whether any government could have contributed more to the welfare of the American people in operating the petroleum industry than that industry has contributed, and is contributing, of its own competitive volition. Never have we been even annoyed by a shortage of petroleum and its products. These commodities everywhere are available at prices consumers can afford to pay. The quality and usefulness of these products have improved through the years. Petroleum reserves now are at a record peak; technological progress is continuing; the customer has learned by experience to expect from this industry everything to which he is entitled, and more."

Boyd estimated the nation's petroleum reserves at 17,000,000,000 barrels, a new high peak, and said they would increase with the development of new oil-producing areas and the compilation of additional information concerning areas now being developed. He placed New Mexico's oil reserves at 703,200,000 barrels, an increase of approximately 192,000,000 over 1938 estimates, and fifth largest among the oil states.

Boyd said the petroleum industry is seeking the cooperation of the governments of the oil-producing states in establishing "some rational, reasonable and effective form of petroleum conservation," especially in bringing about the orderly development of oil fields.

"It can be stated understandably," he explained, "that the industry's efforts at conservation are designed to preserve and to perpetuate the nation's petroleum reserves to the end that present generations and the children of present generations may enjoy the blessing and advantages which accrue to the nation possessing an adequate, properly developed, and economical supply of oil and its products. In view of the oft-repeated charges that the industry, through its promotion of conservation measures, is engaged in a conspiracy to protect monopoly, to establish high prices, and otherwise to create a selfishly-beneficial and artificial economic situation, this explanation may be somewhat startling in its simplicity. It is obvious to the American petroleum industry that its hope for economic security in the future, as at present, lies in doing exactly what it is endeavoring to do — provide the greatest number of people for the longest possible time at the lowest possible cost with an adequate supply of petroleum and its products at prices which encourage use."

Discussing government control, Boyd asserted that "effective petroleum conservation fundamentally is a scientific, not a political problem."

"If any doubt that statement," he added, "he may find all the necessary supporting evidence by studying the results of the development of petroleum resources by political control, as in other countries, and comparing them with the situation in the United States and with the social and economic contributions of the American petroleum industry as a private enterprise to the national economy."

Elmer F. Schmidt will head natural gas men

After two and a half days of business and technical sessions, delegates to the annual meeting of the natural gas section of the American Gas Association, spent the afternoon of May 11 in the Bartlesville area. Among other activities they were guests of Frank Phillips at his Woolaroc ranch. They visited the station of the Bureau of Mines at Bartlesville and inspected the new research laboratory of the Phillips Petroleum Company.

During the session Elmer F. Schmidt, vice chairman of the section and vice president of the Lone Star Gas Company, Dallas, was nominated for the chairmanship. Election to the position will come in October, when the American Gas Association has its annual meeting. Thomas R. Weymouth, vice president, Columbia Gas & Electric Company, will end his term as chairman then.

A recommendation that business assert itself in its relationship to government was part of the address of Baird H. Markham, director, American Petroleum Industries Committee, New York, who was on the program of the first session, May 9. His subject was "Business Relationship With Government."

After outlining what business seeks to do in the spending of money in contrast with the objective of government in the spending of money, he said:

"It seems to me that business sooner or later must assume something of a responsibility for government, if only to the extent of inculcating a few sound principles, operating efficiencies and business ethics, which have enabled business and industry to survive the most incredible hardships."

The magnitude of the natural gas industry was pictured by Conrad H. Lauer, Philadelphia, president of the association and president of the Philadelphia Gas Works. His figures were a $5,000,000,000 measured by investment, through which it serves 17,000,000 customers, largest in its history.

Among the new uses for gas Thomas R. Weymouth, New York, chairman of the natural gas section, mentioned air conditioning, "which opens a vast new field for natural gas."

Sessions May 10 were devoted largely to subjects that pertain to the association with this program:

"It's Only the Beginning," Edward R. Guyer, president, Association of Gas Appliance and Equipment Manufacturers.

"What We Have at Headquarters," Alexander Forward, managing director, American Gas Association.

"Advertising Is Good Business," P. C. Lauringer, president, the Oil & Gas Journal, Tulsa.

"Men and Machines," Louis Ruthenburg, president, Servel, Inc.

"Fair Value for Fair Return," P. McDonald Biddison, and Ed C. Connor, Dallas.

"Recent Court Decisions and Commission Rulings and Their Effect on the Natural Gas Industry," William A. Dougherty, Standard Oil Company (New Jersey).

The program for the final day, May 11, was:

"The Place of the Safety Department in the Organization Set-Up," J. C. Flanagan, United Gas Pipe Line Company, Houston.

"Fifty Years of Regulation of Business," George E. Frazer, consul, Association of Gas Appliance and Equipment Manufacturers, Chicago.

"Cooperative Research to Date," John W. Finch, director, United States Bureau of Mines.

Technical subjects from the problems of selling to those of producing wells and transporting gas were considered in conferences and symposiums throughout the three days of the meeting.

American Chemical Society hears engineers

A technical program in the afternoon, followed by a banquet in the evening made the program of the petroleum division of the Oklahoma section of the American Chemical Society in Norman, Oklahoma, May 13.

The symposium on oil production methods consisted of:

"Water Flooding As a Secondary Recovery Method," D. W. Auld, Phillips Petroleum Company, Bartlesville.

"Improvements in the Chemical Treating of Oil and Gas Wells," P. E. Fitzgerald, Dowell, Inc., Tulsa.

"Squeezing Cement Against Permeable Formations," C. P. Parsons, Halliburton Oil Well Cementing Company, Duncan.

"Recent Developments in the Production of Distillate Reservoirs in the Gulf Coast Area," Laurence S. Reid, Black, Sivalls and Bryson, Oklahoma City.

South Texas A.S.M.E. meets May 19

The South Texas Section of the American Society of Mechanical Engineers will hold its monthly meeting at 7:30 p.m., Friday, May 19, in Room 206 of the Mechanical Laboratory Building of Rice Institute, Houston.

E. R. Mertz, in charge of physical metallurgy and foundry courses at Texas A. & M. College, will speak on "Microscopic Metallurgy Studies."

Mertz is a graduate of the Missouri School of Mines, where he specialized in mining and metallurgy, and was cometallographer at Jones & Laughlin Steel Corporation's Aliquippa, Pennsylvania, plant for several years prior to joining the Texas A. & M. College faculty three years ago.

Pipe Line News

New outlet for Wasson and Bennett fields starts runs

Partial removal of pipe line proration and market relief for unconnected wells in the Wasson and Bennett fields in West Texas will result from the completion of Aloco Pipe Line Company's 23.6-mile 6-inch line to Hobbs, New Mexico, where crude deliveries are made to Atlantic Pipe Line Company on a 5-year contract. The new unit delivered first crude to Hobbs on May 6, and by last mid-week had stepped up its runs to 9000 barrels daily while emptying a loaded 55,000-barrel tank at the Wasson field station.

Aloco Pipe Line Company has tied into all wells held in the Wasson field by Aloco Oil Company, Toddie Lee Wynne, trustee, and J. W. Murchison and Leland Fikes. Arrangemnets have also been made to give connections to several majors, who will absorb a 7-cent per barrel delivery charge to Hobbs. Aloco Pipe Line Company is operating 35 miles of gathering system, using only 6 booster units since gravity flow is available from the extreme northwest edge of production along a southeast course to a point near the center of the east line of Section 829.

Relief derived by Humble Pipe Line Company through connections absorbed by the new outlet will enable the former to give connections in the Wasson and Bennett fields, and to lift its pipe line proration adopted last January 20.

Shell Pipe Line Corporation has started construction work on its 6-inch line from Wasson to Hobbs, and the system is scheduled to be running oil by July 1.

The three outlets will have a capacity of about 12,000 barrels daily each.

Pipe line outlet for new West Texas area

Coffield & Guthrie, Inc., Rockdale, Texas, have authorized the construction of a 15-mile 4-inch crude line to extend from the Sharon pool, Scurry County, Texas, to the Westbrook field, Mitchell County, where connection will be made with the Col-Tex Refining Company's gathering system. The above concern opened the Sharon pool last November, and development has been retarded by the absence of a pipe line outlet.

Gets permission to build St. Elmo-Brownstown line

Oklahoma Pipe Line Company last week was granted permission by the Illinois commerce commission to move crude by pipe line from near St. Elmo, Fayette County, to the Illinois Pipe Line Company's station near Brownstown. The Illinois company has several lines from Brownstown to the Wood River area. Carter Oil Company has developed large production in the Loudon-Beecher City pool of Fayette County, and currently has more than 80 operations in the area.

Lion starts work on line from Schuler to Magnolia

Lion Oil Refining Company has started work on a 6-inch welded oil line from Schuler field, Union County, Arkansas, to Magnolia field, Columbia County. It expects to complete the line by June 1. Standard Oil Company of Louisiana has placed its eight-inch trunk into Columbia County from Haynesville, Louisiana, in operation.

Bear Creek-Driscoll line construction is started

Hunt Oil Company which previously had bought Seaboard Oil Corporation's interest in three gas-distillate wells at Bear Creek, Bienville Parish, Louisiana, has started work on a six-inch welded gas line to connect with Arkansas Fuel Oil Company's system at Driscoll, Bienville Parish, about 10 miles away.

Memphis Natural Gas to extend cathodic protection

Memphis Natural Gas Company will begin work in June on the installation of cathodic protection on 28 miles of its 210-mile, 18-inch transmission line that runs through four states between Monroe, Louisiana, and Memphis, Tenn. With the completion of this program, which embraces a section North of Greenville, Miss., there will be 117 miles out of a total length of 210 miles of the Memphis line under cathodic protection.

These accomplishments have been made under the direction of Birger Johnson, president; Henry C. Wallace, vice president and chief engineer of the Commonwealth Gas System; M. B. Higman, chief engineer, and L. W. Campbell, pipe line superintendent of Memphis Natural Gas Company.

All the cathodic protection work on the Memphis Natural Gas System was designed and installed under the engineering supervision of Robert J. Kuhn, consulting engineer of New Orleans.

Capitol News

[*Continued from page 58*]

ernor, the Attorney General and the State Land Commissioner. It defines a "good faith claimant" as one who has occupied land for a minimum of ten years.

The bill gives the school fund a one-eighth royalty on minerals from vacancies discovered within five miles of oil production. Beyond these limits the school fund gets but 1/16.

The good faith claimant has a prior purchase right on the property, although the discoverer of the vacancy may get 1/16 royalty for his share.

To file on vacancies a fee of $100.00 is required, and if the title must be cleared through the court, suit must be filed in the county where the land lies. The Land Commissioner has the right to name the surveyor who will locate the land to be declared vacant.

One interesting amendment that was passed with the bill provides that no lease executed by a good faith claimant prior to the location of a vacancy shall give the lessee any interest in or to the vacancy. This amendment to the bill was planned to nullify the effect of "Mother Hubbard" clauses of leases, but the effect of it appears to be that if a vacancy is found within a lease, the entire lease is nullified.

Experienced attorneys who are familiar with this phase of Texas land laws said that several years would be required to determine all the defects and loop-holes in the new bill if the Governor signed it, and it is generally believed that the Governor will approve the bill.

"When, as and if" oil is found, Iowa will regulate

Although the first commercial oil is still to be produced in Iowa, the state legislature has given final approval to a bill to regulate drilling and production. The measure has been signed into law by Governor George A. Wilson.

The law requires notice to the state geologist of intention to drill, deepen or plug oil or gas wells, and calls for drilling of offset wells on the property of the lessor within 330 feet of a successful well within a 90-day period. Broad interpretation of a clause prohibiting production of, or search for crude oil, if such activity would waste fresh water, coal or mineral supplies, vests in the state power for drastic regulation of the industry.

Also given final legislative approval is a bill calling for a $25,000 bonus to the first individual or firm bringing in a commercial oil well. The measure, originating in the lower house, had first been refused passage by the senate, but that body later reconsidered its vote and sent the measure to the governor by a 29 to 12 vote.

More than 1,000,000 acres of Iowa land is under oil lease, most of it in southwestern counties comprising part of the Forest City basin.

A house bill seeking to define natural gas pipe lines as public utilities, placing them under state regulation, was indefinitely postponed by that body, while a senate bill to abolish the state geological survey died in committee.

New tax laws for Oklahoma considered

New tax laws of Oklahoma were considered at the dinner of tax representatives of the oil industry in Oklahoma and Kansas in Oklahoma City, May 12. T. H. Marshall, Anderson-Prichard Oil Corporation, Oklahoma, presided.

Richard Jones, attorney for the Oklahoma Tax Commission, discussed the community property law, passed by the last legislature, as well as other tax measures.

Dr. J. M. Ashton, research director, Oklahoma State Chamber of Commerce, discussed fiscal affairs of the state.

Oil Scouts Convention in Houston this week

The sixteenth annual convention of the National Oil Scouts Association of America, to be held in Houston, May 18, 19 and 20, is expected to be one of the most important held since the organization was formed in 1924. A number of prominent speakers are to discuss matters of importance, while business meetings will include discussions on a code of ethics, insurance, publication of the yearbook and means of preventing scouting information falling into improper hands.

The association has addressed an open letter to oil executives, which set forth the hopes of the organization and invited representation from all companies. The letter follows:

"The National Oil Scouts Association of America will hold its sixteenth annual convention in Houston, May 18, 19 and 20, and this letter is an invitation to have your company represented. We beg to engage your interest in this meeting because it will be one of the most important held since the association was formed in 1924.

"As you are aware, the primary purpose of these conventions is the widening of each scout's circle of acquaintance with men of similar occupation so that through the additional sources on information to which he thus secures access he may become increasingly valuable to the company employing him.

"But it is also essential that the association as a whole begins to render service to the industry to which it not only owes its birth but which also maintains it. As a first step in this direction it has been suggested that oil scouts can be practically helpful in combating subversive influences attacking the independence and the integrity of the oil industry. Applying itself intelligently to such public relations service under the experienced guidance of the American Petroleum Institute the National Oil Scouts Association can induce open minded consideration on the part of the public of those difficulties, entirely extraneous to actual operation of oil properties, with which the oil business is being increasingly burdened. Entering this public relations sphere will in no manner conflict with a scout's regular duties.

"The convention will be addressed by Axtell J. Byles, president of the American Petroleum Institute; John Suman, vice president of Humble Oil & Refining Company, and Col. E. O. Thompson, of the Texas Railroad Commission. Particular matters of interest to be discussed at the business meetings will be the compilation of a code of ethics, insurance, the publication of the yearbook and means of preventing scout information from falling into improper hands. There will be geological and geophysical displays and the Bureau of Mines' motion picture "The Evolution of the Oil Industry."

"Acceptance of this invitation will be evidence of your favorable attitude toward the earnest and sincere desire of the National Oil Scouts Association to make its organization an increasingly useful and respected part of the oil industry."

The letter was signed by Harry Leyendecker, chairman of the convention committee, and by C. P. Chisholm and H. J. Roberts, members of the committee.

Headquarters of the association have been established by E. J. Raisch, executive secretary, at 343 San Jacinto Hotel, Houston.

OFFICIAL PROGRAM FOR NATIONAL OIL SCOUTS OF AMERICA, INC. SIXTEENTH ANNUAL CONVENTION IN HOUSTON, MAY 18-20

THURSDAY, MAY 18

12:00 to 8:00 P.M.—Registration (Geological and Geophysical Display) Mezzanine Floor, Rice Hotel.

8:00 to 10:00 P.M.—Meeting of Executive Committee and Board of Directors on Mezzanine Floor, Rice Hotel.

FRIDAY, MAY 19

9:15 to 12:00 P.M.—Business meeting, Mezzanine Floor, Rice Hotel. Talks by Axtell J. Byles, Col. E. O. Thompson and John R. Suman. Showing of Bureau of Mines "Evolution of Oil Industry."

12:00 to 1:30 P. M.—Dinner and style show for ladies, Empire Room, Rice Hotel. Under auspices of "Readers Guild."

12:00 to 5:00 P.M.—Golf tournament, Brae Burn Country Club. Bus leaves Texas Ave. entrance of Rice Hotel at 12:00 P.M. (Those desiring to play will leave business meeting at 11:30 in order to be ready.)

5:00 to 5:30 P.M.—Busses leave Texas Ave. entrance of Rice Hotel for boat to San Jacinto Inn. (Ladies invited. Boat trip limited to those who do not work in Gulf Coast Area.)

6:30 to 7:00 P.M.—Busses leave Texas Ave. entrance, Rice Hotel for San Jacinto Inn. (Ladies invited.)

8:00 to 1:00 A.M.—Dinner dance, San Jacinto Inn, with floor show at 11:00 P.M. which is "The Hit Parade" playing at City Auditorium during week of convention. (Ladies invited.)

SATURDAY, MAY 20

9:00 to 1:00 P.M.—Business meeting and election of officers, Mezzanine floor, Rice Hotel.

2:30 to 3:00 P.M.—Busses leave Texas Ave. entrance Rice Hotel for trip through Hughes Tool Plant including barbecue by Grand Prize Brewing Co. (Ladies invited.)

4:00 to 6:00 P.M.—Softball at Grand Prize diamond. (Bring own gloves.)

6:00 to 6:30 P.M.—Busses leave for Rice Hotel.

9:00 to 2:00 A.M.—Dance, Francis I Ballroom, Rice Hotel. Floor Show. Presentation of new officers and golf trophies by President Lee A. Adams. (Ladies invited.)

Officers of National Oil Scouts Association of America

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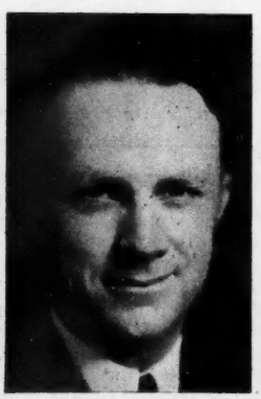
Gulf Oil Corp.,
Tyler, Texas
First Vice President

CHAS. D. WELLS
Carter Oil Co.,
Wichita, Kansas
Second Vice President



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Magnolia Pipe Line Co.,
Kilgore, Texas
Secretary-Treasurer

CHAS. J. BRADLEY
The Texas Co.,
Tyler, Texas
Chairman, Executive Com.

WEEK'S DRILLING HIGHLIGHTS

California

The 4032-barrel discovery well in Northeast Coalinga is puzzling geologists over classification of the strike with relation to Coalinga Nose. Greeley field, Kern County, recorded a 7000-barrel well at 11,517 feet.

Rocky Mountain States

Cole Creek's deep test of Sundance possibilities proved disappointing down to 8511 feet and is plugging back. North Cut Bank, Glacier County, Montana, reported a record gasser: 43,000,000 cubic feet.

Michigan

A record issue of 43 permits this week indicates a summer of heavy drilling. Grandville, current hot spot in Kent County, got a mile extension east; the well did 180 barrels from Traverse lime.

New Mexico

Nitrogen production from an edge well at Lovington has dropped from 35 to 15 million cubic feet daily. An outpost in the Eunice-Penrose gap will be completed as a small producer. Another between Cooper and Lynn fields set casing for a production test.

Texas Gulf Coast

Aldine prospect, Harris County, was converted into an oil field by a 130-barrel, 37.4 gravity well. Frio formation contributed a new sand on the southwest flank of Fannett, Jefferson County, more than 1000 feet below the other producing horizons. Caplen field, Galveston County, got its second producer.

West Texas

Flowing only 200 barrels in 30 hours, the recent Ordovician discovery in Pecos County is not living up to what first was expected of it. As a consequence immediate development will be retarded, although the strike has encouraged further work in the area.

Illinois

A small producer gave Wabash County its first oil production. Five feet of slight saturation in Cypress sand was passed up by a Compton Township wildcat. Noble-Denver pool, Richland County, was extended ½ mile northeast.

North Texas

Eastern Baylor County has encouraging prospects for a new producing horizon and possibly a second deep lime oil pool. A deeper oil horizon in western Clay County also seems assured.

Kentucky

Six miles northeast of Owensboro, Daviess County, a wildcat produced 100 barrels of McClosky lime oil in 12 hours. Chances were considered slim for a test 800 feet southwest of the recently completed discovery well of Corydon, Henderson County.

Indiana

Cypress sand looms as a new producing horizon for Gibson, Gibson County. Confirmation of Rockport, Spencer County, as a gas pool was afforded by completion of the second test ½ mile away.

South Louisiana

Grand Lake, Cameron Parish, contributed a Miocene sand oil field in a neighborhood where several deep dry hole previously had been drilled. Golden Meadows, La-Fourche Parish, got a new sand and an extension. Eola, Avoyelles Parish, recorded its first failure. A shallow sand was found on the south Flank of Roanoke, Jefferson Davis Parish.

Southwest Texas

Considerable new territory was thrown open to development by a Maetze structure wildcat in Goliad County which showed for production in basal Yegua or upper Cook Mountain. Pettus sand furnished a new field 2 miles southwest of Thomas-Lockhart production in Duval County. Vicksburg distillate production at Rincon, Starr County, was extended 2 miles northeast. An extension to West Ranch, Jackson County, puts it in line for a drilling boom.

Comparison of Permits Granted for New Wells

STATE	Week Ending May 13	Total this Mo.	Total this Year	Total this Date Last Year	1938 Year Total
Arkansas	1	6	70	85	247
California	24	53	379	475	1,146
Louisiana	21	49	397	443	1,214
Kansas	38	74	480	623	1,453
Michigan	43	68	425	281	953
Oklahoma	60	106	753	801	1,978
Texas	272	415	4,007	5,393	12,369
Total	459	771	6,511	8,101	19,360

Summary of Wells Completed in the United States Week Ending May 13, 1939

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1939	Total This Date, 1939
Alabama	....	....	....	....	.....	1	2
Arkansas	3	3	....	....	752	80	80
California	20	16	....	4	15,239	394	443
Colorado	....	....	....	....	.....	9	4
Florida	....	....	....	....	.....	....	....
Illinois	45	33	1	11	10,739	1,311	339
Indiana	5	1	....	4	5	50	45
Kansas	27	20	2	5	44,584	447	679
Kentucky	11	5	....	6	265	227	252
Louisiana	14	5	1	8	2,114	357	388
Michigan	29	14	1	14	7,688	443	291
Mississippi	....	....	....	....	.....	1	8
Montana	3	2	1	....	374	40	22
Nebraska	....	....	....	....	.....	....	....
New Mexico	9	7	....	2	2,981	229	199
New York	9*	7*	....	2	40	177*	294*
Ohio	15	2	9	4	3	290	345
Oklahoma	52*	33*	5	14	7,438	727	813
Pennsylvania	25*	19*	5	1	34	456*	882*
Texas	174	114	6	54	75,385	3,611	4,924
Utah	....	....	....	....	.....	....	....
West Virginia	12	2	9	1	10	182	292
Wyoming	1	....	....	1	.....	50	36
Total this week	454	283	40	131	167,651	9,082	10,344†
Total last week	516	343	39	134	172,156	8,628	9,776†
Total this year	9,082	6,212	634	2,236	9,344,997	....	.....

* Includes water-input wells. † Includes 2 Tennessee completions.

Oklahoma Fields

Washita County wildcat passes former state depth record. West Doyle discovery well records 1071 barrels initial.

Tulsa.—Oklahoma field activity for the past week was evenly distributed with a Washita County test establishing a new depth record for Oklahoma, drilling below 11,430 feet and the discovery well for West Doyle pool, Stephens County, flowing 1071 barrels on initial 24-hour test. Ramsey pool had two completions and another well for Coyle pool highlighted activity in Payne County. A new gas field for Garvin County with a possibility of commercial oil was indicated.

Continental Oil Company's Proctor 1, C NW 28-10n-20w, Washita County wildcat, passed the previous record depth for Oklahoma, 11,415, and continued drilling below 11,430 feet. Gulf Oil Corporation's Thomas 1, SW NW NW 14-4n-5w, Grady County, previously held the record at 11,415 feet when abandoned in April, 1938. Washita Oil & Gas Company et al's Harms 1A, C NW NE 6-10n-16w, near Bessie, Washita County, was drilling at 2985 feet, contracted for a Wilcox sand test.

West Doyle discovery well, Phillips Petroleum Company's Culbertson 1, NWc SE 4-1n-5w, was completed for 1071 barrels of 36-gravity oil from Deese sand at 5169 feet. Seven-inch casing was set at 5578 feet and the sand shot with 90 quarts from 5592 to 5616 feet. A 20-acre spacing program for the area is before the corporation commission. Phillips Petroleum Company's Coombs 1, SE SW NE 4-1n-5w, a diagonal northeast offset to the discovery well, began drilling.

Ramsey pool, Payne County, completed its 27th and 28th oil wells in Mid-Continent Petroleum Corporation's Columbia 7, NEc SW 18-18-2e, flowing 259 barrels the first hour, 246 the second and 246 for the third hour to get a potential of 6021 barrels, 4,500,000 cubic feet of gas accompanied the flow from Wilcox sand at 4837 feet. Ramsey 10, NE SE NW 19-18n-2e, also in the community block, flowed 293 barrels the first hour and 235 barrels the second hour with 4,400,000 cubic feet of gas to earn a potential of 6350 barrels. Stanolind Oil & Gas Company had a start for Coyle pool in Fruin 2, C E½ SW NW 12-17-1e, being one location northeast of production.

Gas and Oil Show

Kerr-Lynn Oil Company's Butterly 1, NEc SE 22-1n-1e, eight miles east of Wynnewood, was showing for a gasser with a good spray of oil after a series of perforations from 2700 to 3100 feet. Last July the test showed 3,500,000 cubic feet of gas from 2726 to 2730 feet with present open-flow increased to 5,000,000 cubic feet with some oil. Another test under way in Garvin County was Gillespie et al's Gillespie 1, C NW NE 17-2n-3e, east of Wynnewood.

Grayson pool, Seminole County, will witness a decrease in activity as Cooper Drilling Company defined the pool on the northwest as Cosar 1, SE NW NW 12-6n-5e, finding water in Cromwell sand from 2962 to 3005 feet and was abandoned. J. G. Buell's Madgett 1, SE SW SE 15-10n-5e, between Earlsboro and North Earlsboro pools, Seminole County, was drilling below 4550 feet after checking 230 feet higher on Woodford shale than Luckett 1, NEc NW 28-10n-5e, being topped at 4495 feet and also checked 80 feet higher on the same formation than Estell 1, NWc 14-10n-5e, both of the tests being dry holes. Barnsdall Oil Company's Aldridge 1, NE SE SE 31-9n-8e, wildcat south of Bethel pool, had water with a scum of oil in the hole after shooting sand from 1855 to 1860 feet, top of Calvin being 1855 feet with hole bottomed at 1880 feet.

Four for Lincoln

Lincoln County had four wildcats staked to top activity in that sector. Mason et al's Lindsey 1, SW SE SE 26-12n-2e, ½ mile west of Meeker pool, was moving in materials for a Wilcox sand test. It is west of the old Boland discovery well, Meeker pool, drilled in 1935 to produce nearly 15,000 barrels before going dead from first Wilcox sand at 5461 feet and bottomed at 5562 feet. Julia Oil Company staked Selby 1, NEc 8-15n-6e, a wildcat southeast of Skellyville pool. Cotton et al's Bledsoe 1, SE NW NW 11-13n-6e, was drilling after setting surface pipe at 50 feet. One mile south of Sac and Fox pool, Granlenor staked Lachquement 1, NEc 28-14n-6e.

H. L. Berkey proved northerly production in St. Louis pool, Pottawatomie County in Triplett 1, NEc SE 33-8n-4e, making 360 barrels daily with 1,000,000 cubic feet of gas from Hunton lime topped at 3835 feet and drilled to 3881 feet. Ray Stephens' Thorne 1, NW SE SE 36-8n-4e, north St. Louis area, was drilling below 2500 feet, Hunton lime being the objective. H. Hollenbach's Bolan 1, SE NE NW 28-11n-3e, 3 miles east of Dale and 5½ miles west of Shawne pool, was staked for a Wilcox sand test. A North Shawnee test was moving in tools in Delaney et al's Brammer 1, SE SW SW 25-11n-4e, west of production.

Cement pool, Caddo County, contributed a 105,000,000 gasser in Ray Stephens' Melton 4, SW SE SE 26-6n-10w, topping the sand at 4346 feet and drilling to 4360 feet. The operator's Kit Farwell 2, SE SE SW 27-6n-10w, set casing at 5605 feet and were drilling plugs at 5655 feet. A new test was staked in Curtis 1, SE SW NE 26-6n-10w and Kidd 1, SW NW NE 27-6n-10w, on northwest edge of pool. On the east edge of the pool, Ohio Oil Company et al's Bigley 3, NE SE NE 10-5n-9w, topped sand at 3446 feet and drilled to 3600 feet. Same operators

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo—		
Oklahoma Natural Gas Co., Hedlund 1, nw ne ne 11-5n-9w	Abn.	Lcn.
Carter—		
Rips et al, Wolf 1A, sw sw se se 22-2s-2w	*	1275
Creek—		
Salisbury, Trent 1A, sw se nw 9-16n-7e	35	1539
Shibley, Mike 1A, nw nwc 8-16n-10e	10	2308
Strozier, Bierly 6, se nw sw 12-16n-11e	25	1738
Seibert et al, Taylor 1, sw sw nw nw 18-17n-11e	¶4	2233
Jackson, Gouge 2, ne ne se sw 33-18n-10e	25	2655
Garfield—		
Hughes Drilling Co., Meisener 1, c ne nw 10-20n-4w	170	5944
Grady—		
Parsons, McKenny 1, sec sw 30-3n-8w	*	6030
Carter et al, Smith 1, c se sw 26-5n-8w	¶13	6620
Kay—		
Cooper, Coughlin 1, se ne sw 30-25n-1e	*	4502
Kiowa—		
Wichita, Mace 1, sw swc 11-5n-15w	3	150
Fields et al, Stone 1, se se nw ne 34-7n-17w	*	1926
Lincoln—		
Magnolia, Wagoner 1, nwc ne 18-14n-4e (salt water disposal well)		5033
Mudge, Maddox 3, nw ne se 9-14n-6e	40	3140
Sinclair-Prairie, Buckles "B" 7, swc se 15-14n-6e	15	3076
Logan—		
Gulf, Knowles 4, se sw nw 34-17n-4w	80	6096
Marshall—		
Hewitt, Adams 3, sw se sw se 31-7s-6e	11	564
Okfuskee—		
Burke-Greis, Palmer 1, nec se 19-10n-10e	¶15	3698
Oklahoma—		
I. T. I. O. Co., Button 7, se nw sw 19-11n-2w	720	3062
Okmulgee—		
Jim Oil Co., Thomas 1A, se ne se sw 24-14n-13e	2	1170
Price et al, Grayson 5, 210 ft w c ne¼ 21-14n-14e	5	1132
Lampert, Flint 10, ne sw se se 27-14n-14e	20	1152
Newblock, Gill 3, c w½ sw 36-15n-12e	*	2821
Osage—		
Mid-States 1, se ne sw 5-25n-10e	*	2147
Phillips, 106, c w½ sw 12-27n-5e (Input repressure well)		3031
I. T. I. O. Co., 461, swc nw 16-26n-11e	*	1908
I. T. I. O. Co., 462, nw sw se 9-26n-11e	¶0.3	1950
Olson, 1, sec 14-26n-4e	*	3213
I. T. I. O. Co., 1, nwc se 26-25-6e	35	2741
Sinclair-Prairie, 4, nw ne sw 22-25n-6e	15	2744
Sidwell, 2, cwl nec 35-24n-8e	*	2407
Peters et al, 1, se sec nw 17-24n-7e	*	2647
Twyman, 1, se sec ne 32-22n-8e	*	2332
Pawnee—		
Coronado, State 20, sw nw sw 16-21n-8e	2	2424
Payne—		
Mid-Continent et al, Columbia 6, sw nw sw 18-18n-2e	4720	4834
Pontotoc—		
Moore et al, Shauers 5, sw nw nw 29-2n-7e (otd 3714 ft)	90	2731
Lake, Sumner 3, se sw sw 25-5n-4e	100	2592
Pottawatomie—		
Dickson, LaReau 1, nec sw 33-6n-3e	*	3615
Cooper, Decker 1, swc 16-7n-4e	80	3556
Wood, Smith 1, sw ne nw 36-7n-4e	170	4234
Sinclair-Prairie, Gammon 1, nw sw nw 30-7n-5e	10	4245
Delaney, Bruno 3, nec se 31-7n-5e	600	4103
Magnolia, Nicklas 6, swc nw 31-7n-5e	150	4480
Hall et al, Coleman 2, se nw nw 33-7n-5e (otd 4037 ft)	125	4165
Denver P & R, Jones 1, sec nw 5-6n-5e	45	4281
Seminole—		
Viersen, Community 2, 210 ft n nw sw sw 25-5n-7e	¶4.3	2283
Halko, Coker 1, se sw se 17-7n-6e	*	4355
Love et al, Abbott 1, nw se ne 33-8n-7e	45	3190
Stephens—		
McAllister et al, Wade 3, ne sec ne 11-2s-8w	51	2095
Curtis, School Lot 1, se se sw sw 3-1n-5w	Abnd.	Lcn.
Ruff et al, Burk 6, se swc ne 34-1s-8w	*	2220
Tillman—		
I. T. I. O. Co., Hatter 1, c sw ne 32-2s-17w	4	4170
Wagoner—		
Shirley, Lancaster 1, s½ w½ ne 30-17n-18e	35	760

* Failures; † Junked; ¶ Million cu. ft. gas.

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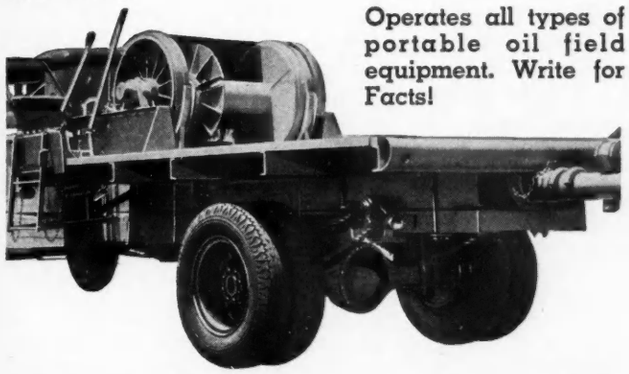

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were drilling plug at Bruce 6, SE SW NE 11-5n-9w, after setting pipe at 3974 feet, total depth being 3980 feet.

Kerr-Lynn Oil Company et al's Olmstead 1, C E½ SE NW 12-14n-3w, north of Edmond, Oklahoma County, was shut down at 6524 feet after topping first Wilcox sand at 6410 and second sand at 6493 feet, both sands being dry. Olsen Oil Company et al's White 1, C NE NE 30-11n-1e, Newalla discovery well, on the last test flowed 173 barrels of fluid in 16 hours, still cutting some mud. Operators will acidize when the mud is exhausted, the pay being Hunton lime.

Meridan pool, Logan County, had a start in Sinclair Prairie Oil Company's Crews 3, SE NW NE 27-16-1e, a north offset to Crews 2. Helmerich-Payne et al's Johnson 1, SEc 2-15n-1e, south of Meridan pool, topped Hunton lime at 4940 feet to check on par with wells in the pool and was drilling below 5000 feet in the lime.

Three new tests in Missouri play

St. Joseph, Mo.—Forest City Basin was active with three new tests staked and others pending. C. C. Lewis' Chandler 1, NEc 4-45n-33w, 18 miles south of Kansas City, Cass County, had Mississippi lime at 842 feet after finding Peru and Bartlesville sands dry. A half-million cubic feet showing of gas was reported. Frank Hopper et al's Black 1, NWc 35-52n-32w, Clay County, ran 8-inch casing to 919 feet to shut off water in Mississippi lime, with very little showing. The test is located in the old Liberty gas pool.

E. F. Slater staked Sayers 1, NEc W½ SE 14-65n-18w, 9 miles southeast of Unionville, Putnam County. J. W. Farrar has moved in a machine for a test in NE NW SW 23-47n-28w, Johnson County, west of Warrenburg. Jones et al's Holt 1, NW NE NE 34-60n-35w, Andrew County, was staked, the test being northeast of Savannah.

Other tests already on location include A. M. Sims' Wilson 1, NEc SW 2-37n-21w, drilling below 1600 feet after topping Granite Wast at 1526 feet. J. W. Farrar et al's Gard 1, C NW NW 21-46n-28w, drilling; J. W. Farrar's Gard 1, SW SE NW NW 21-46n-28w, shut down at 460 feet; J. W. Farrar's Bastell 1, SEc 27-46n-28w, shut down at 70 feet; Eastern Drilling Company's Williams 1, NWc NE 28-53n-32w, shut down at 65 feet; C. E. King et al's William Willis 1, NWc 13-55n-32w, moving in machine; George W. Moore et al's McQuate 1, NE SW SW 11-57n-31w, drilling below 250 feet; Delfeld et al's Turner 1, C NW NW 27-59n-9w, drilling below 225 feet; Birkett et al's Gee 1, NWc SE 28-60n-35w, moving in machine; Brin et al's Garrett 1, C NE NE 2-61n-38w, a location; H. V. Elwell's Taylor 1, CNL S½ S½ N½ 12-62n-21w, rig up; J. E. Everett et al's Fred Springs 1, SWc SE 30-62n-38w, having a show of gas at 500 feet and drilling below 2450 feet. Markham et al's Frank Gaffney 1, SW SE SW 24-63n-40w, has rotary rig up; George W. Moore et al's Casteel Bros. 1, NEc 32-65n-24w, a location.

Kansas Field Developments

South Burnett, Big Creek pools get production extensions. Norton County wildcat shows interesting possibilities.

Wichita.—Field activity for Kansas during the past week took the form of extensions for South Burnett pool, Ellis County, one for Big Creek pool, Russell County, and a test connecting gas and oil production in the Cunningham pool, Pratt County, good for an open flow of 23,000,000 cubic feet of gas. An interesting wildcat in Norton County was testing for Kansas City-Lansing pay after cores showed good saturation.

Dickey Oil Company's Gumble 1, SWc SE 6-11-17w, extended South Burnett pool, Ellis County, a half mile to the north. The hole filled with oil after drilling to 3346 feet in Arbuckle lime, topped at 3342 feet and operators are testing for potential. A wildcat staked for the county was Nelson et al's Novak 1, NWc NE 36-13-16w, one mile west of Gorham pool.

Big Creek pool, Russell County, was extended a half-mile northward as Phil-Han Oil Company's Reinhardt 1, SE NE NE 24-14-15w, topped Arbuckle lime at 3250 feet and drilled to 3258 feet, oil rising 1500 feet in the hole in 12 hours. Allon pool had a start in Vernon Oil & Gas Company's Olson "C" 1, NW NE NW 27-14-14w, an east offset to the initial producer in the pool.

Sinclair Prairie Oil Company's Greider 1, NE SE SE 26-27-11w, located between gas and oil production in Cunningham pool, Pratt County, was completed for a gas well with an open-flow of 23,000,000 cubic feet, pay being Viola lime at 4090 feet.

Although Norton County has produced no oil as yet, Power Oil Company et al's Van Patten 1, C NE 26-4s-21w, southeast of Norton, may change the picture. Saturation in Kansas City-Lansing lime was had from 3475 to 3510 feet but Arbuckle lime was found dry when drilled through to 3665 feet. Operators set casing at 3616 feet and are perforating to test the lime section in Kansas City-Lansing.

Gulf Oil Corporation's Janssen 1, SWc 29-17-10w, a half-mile east of Bloomer pool and ¾-mile north of Stumps pool, Ellsworth County, had a small show of oil in the hole after drilling plugs at 3263 feet in Arbuckle lime and coring now into the lime. Casing was landed at 3255 feet and a show of oil was had in Kansas City-Lansing group from 2980 to 2985 feet. If Arbuckle lime fails to commercially produce, the upper show will be tested.

Beaver pool, Barton County, was seeking its second Topeka lime well as The Texas Company's Luerman 1, NE SE SW 8-16-12w, topped the lime at 2675 feet and set 8-inch casing at 2890 feet. Operators are drilling plug at 2894 feet. This test offsets Martins' Feltes 1, NW SW SE 8-16-12w, which tested for a potential of 2546 barrels of oil and 10,000,000 cubic feet of gas to open a new horizon for the field. C. E. Ash's Koch 1, NEc 23-20-12w, a mile west of production in Marchand pool, topped Lansing lime at 3103 feet and was drilling below 3190 feet in the formation. A show of oil was had from 3120 to 3125 feet.

Cities Service Oil Company's DeWitt 3, NEc 33-19-9w, was drilling plug in Arbuckle lime. The test is a west offset to Hinkle et al's Truesdale 1, NWc 34-19-9w, ½-mile south and the same distance east of production in Campbell pool. Hole is now standing 1500 feet with oil and crews are rigging up to acidize. Charles Seaney staked location for Link 1, SW NW SE 19-19-9w, 1 mile west of Chase pool, Rice County.

C. H. Weaver et al's Johnson 1, SEc

Kansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton—		
Long et al, Everligh 1, swc ne 3-18-14w	*	3371
Murfin et al, Birzer 1 nec sw 21-19-11w	*	3405
Butler—		
National Refining Co., Green 1 cwl sw se nw 31-27-3e	¶4¼	2019
Cowley—		
Grallop, Clarke 1, nw c ne 11-31-3e	*	2995
Carlock et al, Houston 1, sw se sw 3-31-4e	*	3389
Barnett et al, Waite 1, 80' e ne nw sw 21-31-4e	17,508	3368
Bess et al, Cranston 1, csl nec 22-32-5e	¶2.5	647
Ellsworth—		
Cities Service, Mehl 1, new sec ne 19-17-19w	3185	3238
Graham—		
Continental, Trexler 1, csl se nw ne 15-9-21w	2275	3721
Greenwood—		
Henderson, Harlan 8, sw sw nw nw 34-22-11e	5	1960
Harvey—		
Davis, Nickell 1, cnl, swc ne 7-22-1w	*	3320
McPherson—		
Continental, Hetzke 2, csl se nw sw 20-21-1w	428	3328
Ness—		
Oriental, Pearlsee 1, nec 21-18-25w	Abnd.	Lcn.
Rice—		
Continental, Siemsen 3, nw sw nw 18-18-7w	2423	3217
Continental et al, Fuller 3, swc nw 12-18-8w	953	3241
Mission, Habiger 7, sw nw nw 5-18-10w	3000	3215
Sinclair-Prairie, Smith 1 ne se ne 1-19-8w	635	3269
Rooks—		
Vickers, Luhman 4, csl sw nw se 11-9-16w	350	3316
Russell—		
Grimes, Bellar 1, swc 10-12-15w	Abnd.	Lcn.
Skelly, Opdycke 6, nwc sw 29-14-13w	683	2910
Cities Service, Esfield 1, nwc 22-15-13w	702	3096
Hall, Landon 2, se sw se 11-15-14w	1795	3087
Republic, Resner 2, sec nw 23-15-14w	47	3364
Cities Service, Podszus 2, nw se sw 25-15-14w	1309	3301
Coralena, Deines 9, ne nw ne 36-15-14w	2259	3286
Stafford—		
Stanolind, Elson 1, ne nw nw 6-22-12w	384	3648
Stanolind, Harbeson 2, cwl ne se nw 11-24s-11w	6007	3734
Stanolind, Hayes 6, cwl ne se se 11-24-11w	621	3763
Sumner—		
Champlin, Love 6, nwc sw 9-30-2w.	15	3167

* Failures; † Junked; ¶ Million cu. ft. gas.

SW 21-17-8w, which previously extended Edwards pool, Ellsworth County, ½-mile to the northwest after drilling through Arbuckle lime to 3248 feet, earned a potential of 1257 barrels daily.

Harvey County had a wildcat location in Western Kansas Oil & Refining Company's Moorhead 1, SWc 24-23-1w, 7 miles southeast of Halstead pool.

Lloyd, Study et al's Chamness 1, NEc SW 35-30-3e, a wildcat 2½ miles north of Smith pool, Cowley County, was abandoned at 3455 feet in Arbuckle lime. Two starts now building derricks in Hittle pool include Trees Oil Company's Lewis 1-A, NWc NE 28-31-4e and Hartman & Blair's Waite 6, SEc SW 21-31-4e. Stafford County had a wildcat failure in Lauch and Moncrief's McConnaughey 1, SWc 18-24-13w, 1¼ miles southeast of Rattlesnake pool, after water entered the hole following an acidizing job in Lansing lime from 3626 to 3826 feet where a show of oil was found.

In McPherson County Westgate-Greenland Oil Company started Heene 1, NW SE SW 18-17-1w, ½ mile south of production in Roxbury pool. Continental Oil Company's Mattson 1, SW NW NW 31-20-5w, 4 miles east of Bornholdt pool, was drilling below 1850 feet.

Coralena pool, Russell County, saw a new test drilling ahead in Carter Oil Company's Sellens 1, C S½ N½ SW 17-15-13w. E. B. Shawver and Indian Territory Illuminating Oil Company's Nice 1, NEc SW 16-33-2e, a wildcat north of Rutter pool, Sumner County, had a show of oil in Mississippi lime at 3290 feet and drilling below 3350 feet in the same formation.

Illinois Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Clay County—		
Pure, Pierce 1A	1202	3050
Arthur Routt 2A	110	3078
H. R. Bissey 1	74	3105
Clinton County—		
Shell, Criley 8A	83	1220
Fayette County—		
Carter Oil Co., Mills 2	203	1568
Elsie Owens 2	272	1572
John Williams 2	295	1568
Mary Welker 3	218	1545
Ola Morton 2	120	1585
C. F. Steele, Hiatt 1	240	1562
Whisenant et al, Smith 7	80	1565
Smith 8	90	1572
Smith 9	120	1577
Evans & Bonner, Watson & Boyd 1	*	1715
T. W. Lee, Horner 1	160	1586
Texas Co., O. Kepner 2	147	1577
Wantland 2	175	1583
Wooten 2	126	1544
Wooten 3	168	1569
Gallatin County—		
Bailey & Lucas, Dr. H. Logan 1	*	2980
Dillon et al, Carol Frohoch 1	*	2750
Lawrence County—		
Kentucky Nat. Gas Corp. & W. C. McBride, Inc., Benson-White 2	¶2.4	1119
Marion County—		
Texas Co., Hawthorne 5	588	1980
L. Hawthorne 9	280	1809
O. Johnson 10	1288	2005
O. Johnson 11	448	1979
V. Kalkbrenner 20	560	1969
V. Kalkbrenner 21	420	1771
V. Kalkbrenner 22	238	1782
W. Martin 6	63	1874
N. Young 6	*	1953
N. Young 7	*	1966
N. Young 8	252	1793
N. Young 9	154	1785
D. Hester 1	280	2090
D. Young 11	1540	2060
Magnolia, Young 15	400	1785
W. O. Chitwood 18	330	1881
Kingwood & Bell, Rogers 1	15	2102
St. Clair County—		
A. H. Emenhiser, Alberts 1	*	1615
Sangamon County—		
A. C. Leathers, Workman 1	*	1903
Shelby County—		
Harris et al, Skinner 1	*	1702
Hughes et al, Fluga 1	*	2212
Washington County—		
Bill Morgan et al, Dawkins 1	*	1850
Wayne County—		
H. H. Weinert, Cunningham 2	*	3450

* Failures; † Junked; ¶ Million cu. ft. gas.

Illinois Developments

Small producer gives Wabash County its first pool. Compton Township wildcat passes up Cypress show.

Olney, Ill.—A small producer gave Wabash County its first oil production last week. Crum and Bartlett's Camilla J. Stansfield 1, SW SE SE 9-2s-13w, Keensburg Township, produced 43 barrels on a 28-hour pumping test from a formation believed to be the Diehl and Jordan sand, similar to the Petro found near Centralia. It topped 10 feet of slight saturation at 1705 feet.

Closely watched was R. S. Hayes' Anna Schultz 1, SE NW SW 7-3s-13w, Compton Township, which had slight saturation in 5 feet of Cypress sand, topped at 2483 feet. It was drilling on for a test of the McClosky. Continental Oil Company was rigging up Cleve Schultz 1, Section 30-2s-13w, less than 2 miles north of the Schultz test.

One of two highly important Washington County wildcats was plugged and abandoned last week, while the other was temporarily shut down. Bill Morgan et al's Dawkins 1, SE SW 15-2s-1w, 1½ miles northwest of Ashley, found the Benoist, Aux Vases and McClosky formations dry and was plugged at 1850 feet. The Benoist was topped at 1659 feet, and the Aux Vases at 1685 feet. Harry B. Hartner's George Flaurhaus 1, SE NW 10-2s-4w, Plum Hill Township, 6 miles west of Nashville, was shut down at 1300 feet. While hopes for the wildcat were high as formations ran high, optimism waned when salt water was encountered in the Stein sand at 1025 feet. G. A. Morris and associates spudded the Henry Piper Sr. 1, Section 29-1s-5w, Venedy Township, a wildcat ¾ mile from Smith's Geo. Marquard 1, NE SW SW 33-1s-5w, which cored some Benoist saturation at 956 feet but was abandoned when the formation could not be made to produce commercially.

Gulf Oil Corporation, which holds a large block of acreage in Irvington Township, Washington County, will drill on the Dr. G. W. Baldwin farm, 3 miles northwest of Irvington. This acreage, on which drilling has been delayed while efforts were made to complete the block, is highly regarded on the basis of preliminary surveys. Three tentative locations in Section 4-1s-1w are reported under consideration for the first test—one in SW SW SW, another in SW SE SE, and the third in NW SW SW.

Bert Fields et al's Turner 1, C NW 27-9s-9e, a mile southeast of Junction, was spudded last week as an outpost to the area opened a week ago by Coates et al's Dr. E. A. Greene 2 (Green 1-B), SE SE SE 17-9s-9e, Gold Hill Township. The pool opener, capable of producing 150 barrels of oil a day from the Waltersburg sand, was shut in last week while awaiting pumping equipment. Offering encouragement to a possible town-lot drilling campaign, village trustees of Junction announced no restrictions would be placed on drilling within the village limits. The new producing area is 50 miles from other production.

Noble-Denver Extended

A half-mile northeastern extension to the Noble-Denver pool of Richland County was provided last week by Pure Oil Company's Russell E. Storer 1, NE NE NE 23-4n-9e, Denver Township, completed at 3000 feet as a large flowing well from the McClosky. Initial production figures were not immediately available. Of greater importance than its distance from the proven area of the pool and its large production is that the completion is in the McClosky lime. Most wells in the pool are producing from the Cypress sand, although a few have been carried to the deeper McClosky lime formation. Another 16 wells were active in that area last week, all but 3 being drilled by Pure Oil Company. The three were Mabee Oil Company operations.

Acid treatment of Rockwood and Leathers' Amos Yonaka 1, Section 22-2n-14w, Bonpas Township, brought a small flow of oil and salt water from the McClosky. The showing, which may bring the wildcat into the classification of a commercial well if operators are successful in shutting off the water, was described as sufficient to make the area attractive for additional development. A slight saturation in 4 feet of McClosky pay was recovered several months ago, and the wildcat has been idle for many weeks because of high water from Bonpas creek.

Pure Oil Company was attempting to complete a Cypress sand well in the old Noble pool of Richland County, which otherwise was inactive after experiencing one of the most important McClosky lime drilling campaigns of a year ago. The company's John O. Coen 19, Section 4-3n-9e, was bottomed at 2586 feet. It is not far from two other Pure operations which found salt water in the Cypress last year. The sand at the Coen 19, however, was described as being unusually thick.

Adams Oil & Gas Company's Old Ben Coal Company 1, SW SW NE 19-5s-2e, Barren Township, Franklin County, which had been temporarily abandoned at 3848 feet, was re-entered for a Trenton lime test, and at last report was drilling at 4620 feet. In this county, Gulf Oil Corporation's Earl Hinman 1, SE SW NE 19-5s-3e, cored 3 feet of Stein sand saturation and was preparing to take a second core below 2490 feet.

Less than ½ mile west of Mount Vernon, M. B. Armer and J. J. Ruck spudded in the Paul Gilbert 1, NW NE SW 25-2s-2e, Shiloah Township. Near Carter Oil Company's Dix pool, Minerva Oil Company's Sargeant 1, NE NE 28-1s-2e, cored a slight Benoist sand saturation at 2000 feet but was drilling on at 2200 feet. Pyramid Oil Company's Inland Steel 1, S½ NW SW

30-4s-2e, Elk Prairie Township, south of Waltonville, was drilling at 1200 feet.

With several tests under way and others scheduled for early drilling, leasing activity in central western Illinois counties is increasing. This is particularly true of Schuyler, Brown, Adams and McDonough counties. Very few tests in this area have been carried below the Niagara, or Hoing sand, and it is expected that a score or more tests will be taken to the lower Trenton, below 800 feet, during the current season.

The state geological survey, in its latest report, gives the state's production as 19,271,000 barrels for the first four months of the current year, or almost equal to the production for all of the past year. The survey lists Illinois as fifth among the nation's oil producing states, ranking behind Texas with 161,917,000 barrels; California with 74,626,000 barrels; Oklahoma with 52,549,000 barrels, and Louisiana with 31,728,000 barrels.

R. H. COX, Hiram M. Reed and J. G. McIntosh have organized Reco Pipe Line Company as a Texas corporation with headquarters in Corpus Christi.

Indiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Knox County—		
Midwest Dev. Corp., Jackson	*	3241
Posey County—		
Evans O&G Co., Farmers National 1	*	2980
Spencer County—		
Damron et al, Haines 1	*	1526
Sullivan County—		
C. C. Davis, Huff 3	5	767
Vandenburg County—		
Carpenter Oil Co., Shadick 1	*	300

New York Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
Forest Oil Co., Ackerman farm, Bolivar	18	1426
Bradley Prod. Corp., Star farm, Bolivar	5	1440
Pure Penn Pet. Corp., Christman farm, Bolivar	8	1426
Lester Young, Myrtle Young farm, Scio	4	1045
N. V. V. Franchot, Reddy farm, Bolivar	5	1438
Allegany: Water Intake Wells		
Pure Penn Oil Co., Christman farm, Bolivar	...	1495
Forest Oil Co., Ackerman farm, Bolivar	...	1425
Steuben County—		
New York State Natural Gas Co., H. Thompson 1	*	4094
Belmont Quadrangle Drilling Co., A. Taft 1	*	4202

Pennsylvania Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bradford District—		
Pure Penn Oil, Inc., Kinley Oil Co.	10	....
Ernest Meridan et al, Hiram	1½	....
Rew Oil Co., 380-1 Bing	2	....
Messer Oil Corp., Redfield	5	....
Forest Oil Corp.	1	....
Forest Petroleum Corp., 2 wells	2	....
Niagara Oil Corp., 3 wells	3	....
Niagara Oil Corp.	1	....
Bradford Transit Co., 5 wells	5	....
Bradford: Water Intake Wells		
Grant & Mohan Oil Co., No. 3 484-5 Bing	...	....
Forest Petroleum Corp.	...	....
Butler-Armstrong District		
Michel & Co., Albert Michel	3	....
Middle District		
Columbia Gas Co., McCullough	*	....
New York-Pennsylvania: Gas Field		
Empire Producing Co., Floyd Williamson No. 2	¶	....
Washington County—		
Foley & Williams, Baldwin	¶.05	1360
Allegheny County—		
Price Bros., Kirk 1	¶.15	1488
E. J. Dunn, Bowman 1	¶.40	2450
Potter County—		
Sylvania Corp., Harrison 2	¶5.50	5285

* Failures; † Junked; ¶ Million cu. ft. gas.

Indiana Developments

Cypress looms as new sand in Gibson pool outpost. Second completion confirms Rockport gas discovery.

Evansville, Ind.—W. F. Lacy's Cooper-Thomas 1, NW SW SW 18-3s-13w, Wabash Township, Gibson County, was swabbing free oil after a shot in the Cypress sand, promising to open a new producing horizon in the recently-opened Gibson pool. Four McClosky lime wells have been completed in the pool, and a fifth was being completed last week. The lime was found dry at Lacy's outpost, and the well was plugged back to 27 feet of Cypress sand saturation below 2501 feet.

An effort to extend this pool 1½ miles southeast failed when Ray J. Ryan's William & Brizella Dunn 1, NE SE SE 18-3s-13w, was abandoned when it showed sulphur water at 3026 feet. Hollandsworth & Bander's David M. Cooper et al 1, SW NE NE 13-3s-14w, drilled plugs to a good 14-foot McClosky saturation, but a production test was delayed by fishing.

Water intrusion complicated Arthur Grewe et al's Jas. S. Brammer 1, SE NE NE 14-5s-9w, Campbell Township, which showed for 100 barrels a day to open a new Warrick County pool a week ago. A 24-hour production test was to be made as soon as water was shut off. Acid treatment was given during the week.

Confirmation of the new Spencer County gas pool, named the Rockport gas field last week by the division of geology of the state conservation department, was given by Frank L. Damron's W. W. Spain 1, C SE SE 18-7s-6w, Ohio Township, ½ mile north of the discovery, when it gauged 5,500,000 cubic feet a day. Production is from the Waltersburg sand, topped at 880 feet. The formation at the discovery, W. W. Damron's Shelby Wright 1, SE SW NE 19-7s-6w, was topped at 891 feet, while its initial production was 5,000,000 cubic feet. To the east of the Wright farm, F. L. Damron's Sue Kopp 1, C SE NE 19-7s-6w, was spudded last week, while Frank Damron et al's Audrey W. Haines 1, NW NE SE 34-7n-6w, was abandoned as dry at 1526 feet.

Near Mount Vernon in Posey County, A. Grewe & August Kruse's Pauline Scherer 1, NW NW SW 13-7s-13w, Black Township, acidized a doubtful McClosky saturation and was being placed on test. Bottom was at 2720 feet. Tide Water Associated Oil Company's Lucy P. Hyne 1, NW NW NE 10-4s-13w, Rodd Township, was drilling at 2740 feet after topping Cypress sand at 2568 feet. Also interested in this wildcat are Yingling & Hays and Exchange Oil Company. Ford & Doran located Charles Martin 1, Section 3-5s-12w, Center Township.

Kentucky Fields

Preston opens McClosky lime pool east of Thurston. Slim chances for producer near Corydon discovery.

Owensboro, Ky.—J. C. Preston's C. H. Abell 1, just east of Thurston and 6 miles northeast of here, opened a new Daviess County McClosky lime pool when it pumped 100 barrels of oil in 12 hours from 5 feet of saturation topped at 1417 feet. No acid treatment had been given. It was shut down pending completion of a line to the well by Ashland-Owensboro Company, subsidiary of Ashland Oil & Refining Company.

Smith & Vickers were moving in equipment for a test ¾ mile from the pool opener on the T. J. Turley farm, while deals for other tests in the vicinity were pending. Nearest production is in Spencer County, Indiana, five miles to the west, where W. W. Damron two weeks ago opened a new Barlow sand pool at 1405 feet, while the prolific Birk City McClosky pool lies 15 miles west and slightly south.

Ralston & Sales' Annie Stewart 1, outpost to the Spottsville pool of Henderson County, resumed last week after having been shut down since February by high water. Drillers were cementing above tools lost before flood waters shut down the test, and will drill past them. Bottom is at 2038 feet, and the hole will be carried with rotary tools to the McClosky at about 2450 feet.

In the new Corydon pool of Henderson County, Sun Oil Company's Lockett 1 was coring for McClosky at 2605 feet, after having extracted three dry cores; chances of making it a producer were considered slim. Meanwhile, Carter Oil Company's King-Pritchett 1, being drilled by Parker Drilling Company, was drilling past 2300 feet. The discovery in this pool, which was brought in flowing at 2605 feet, is 800 feet northeast of Sun's well.

In the Narrows pool of Ohio County,

where there are indications of an active drilling campaign this summer, Ken-State Oil & Gas Company completed its third operation on the T. P. Fentress lease as a Cunningham sand producer of 20 barrels daily yield before shot. Bottom is at 610 feet. The No. 1 on this lease is a McClosky lime producer yielding about 40 barrels daily with bottom at 685 feet, while the No. 2 is yielding 25 barrels daily after shot in the Barlow sand at 481 feet.

Leasing activity is increasing in southeastern Kentucky, with particular attention being paid to Perry, Laurel, Knox, Whitley, Lawrence, Morgan, Johnson, Magoffin, Powell and Estill Counties. Leases are being taken by both major companies and independents on structures where shallow production was first obtained from the Wier, Berea and Corniferous sands years ago. Deep tests have been definitely scheduled for Lawrence, Johnson and Morgan Counties this summer.

Henderson County, now boasting four new pools, produced 45,522 barrels of crude during March, a sharp gain from the 36,261.97 barrels produced in February, but flood waters continued to curtail pumping operations far below normal. January production was 74,396.12 barrels.

Kentucky Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Daviess County—		
Cameron et al, Akins 1	200	1213
Farmer et al, Nation 1	25	1218
Cane Run Pet. Co., Jackson 10	20	676
Gardner Bros., Walker 3	10	891
Grayson County—		
Ross et al, Arroy Lloyd 1	*	1818
Lee County—		
Day et al, Gourley 1	*	....
Ohio County—		
Dehart et al, Early 9	*	645
Wm. Russell 2	*	685
Dowd & Huff, Downes 7	*	362
Neal et al, Mattingly 6	10	501
Wolfe County—		
Hollon, Rose 1	*	....

Ohio Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Ashland County—		
Windlin, Gongiver 1	*	749
Athens County—		
Hartley et al, O. O. Baker 1	2	1130
C. P. Bowman, Lepos 1	¶.20	1670
Gibson et al, Blackwood 1	*	970
Townsend, Hartley 1	¶.16	1708
Cuyahoga County—		
Benedum-Trees, Davis 1	¶1.30	2832
Holmes County—		
Lydic O&G Co., Wolgamot 1	¶.11	710
Licking County—		
J. T. Bebout, Wahl 1	¶1	2631
Meigs County—		
Wright, Saxton 1	*	860
Ohio F. G. Co., Russell 1	¶.92	820
Muskingum County—		
Gas Prod. Co. of Ohio, Eppley 3	¶2	3895
Noble County—		
Jewell et al, Muskingum Conservatory 2	¶.10	1395
Washington County—		
Davis et al, Richard 1	*	2250
McKitrick & Parks Co., Bauman 1	¶.25	1058
Vickers Oil Co., Vickers 7	1	1345

West Virginia Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Cabel County—		
Adkins, Perry 1	¶.09	3438
Gilmer County—		
Pittsburgh & W. Va. Gas Co., Fulton 7670	¶.06	1529
Weekley, Stern & Turner 1	5	1692
Kanawha County—		
W. Va. Gas Corp., Reese	¶10.30	4785
Lincoln County—		
Cambridge Gas Co., Davis, Sr. 2	¶.26	3902
Dry Fork O&G Co., Adkins 1	¶.78	1010
Pleasants County—		
Hart O&G Co., Hart 2	¶.30	1720
Ritchie County—		
Burge Dr. Co., Lewis 1	*	1771
Roane County—		
Clendenin O&G Co., Jones 1	¶.75	1473
Healey, Gandee 2	¶.18	1525
Rodgers Prop. Co., Ball 1	5	1695
Wayne County—		
United F. G. Co., Hussey 4829	¶.07	3115

* Failures; † Junked; ¶ Million cu. ft. gas.

West Texas Fields

New Masterson producer fails to live up to expectations. Another big well completed on east edge of North Cowden.

San Angelo, Texas—Development of the Ordovician lime area recently uncovered on the Masterson structure, northern Pecos County, will be on a conservative basis since the discovery has sustained a sharp decline in its oil yield. Anderson-Prichard Oil Corporation and Monte Warner's Masterson 1, C S½ N¼ H&GN Section 104, Block 10, flowed 200 barrels of 37-38 gravity oil in 30 hours early last week after installing tankage for an extended test. The flow was below expectations, as the well produced 118 barrels of oil in 3 hours, with gas volume rated at 100,000 feet daily, before shutting down May 1 to erect tankage. Production is from Ellenberger limestone at 4554-95 feet, with an elevation of 2425 feet.

The preliminary performance of Masterson 1 gave ample encouragement for the launching of a development program on nearby leases. Ordovician production is in big demand in West Texas, owing to its valuable lube oil content. The Pecos County strike is exceptionally shallow, and completions can be made at less cost than wells in many of the Permian lime areas.

Magnolia Petroleum Company has started operations on a new Ordovician project for northern Pecos County, having skidded rotary rig 75 feet west of H. J. Eaton-Abell 1, east corner H&TC Section 23, Block 3, after plugging the latter at 2076 feet. Oil saturation in lime, topped at 1890 feet with an elevation of 2424 feet, proved barren after cementing 7-inch at 1830 feet. The first test was scheduled to drill to 6000 feet, or the Ellenberger. It is 8½ miles northwest of the Masterson area.

Semi-wildcat production was developed last mid-week in Pecos County when Aaron Leidecker, Cain et al's M. M. Lehn-The Texas Company 1, east corner H&GN Section 71, Block 10, sprayed oil with 5,000,000-foot flow of gas after 90-quart nitro shot at 1672-1743 feet. It is 2 miles southeast of a small oil well in the same horizon. E. R. Lloyd et al made location for H. F. Bonebrake 1, situated on the NE½ N¼ H&GN Section 110, Block 8, for a 2100-foot wildcat after obtaining the shallow rights on three 80-acre leases in the section. R. H. Henderson and others have been assigned lease on the south 116 acres of the west 160 acres of GC&SF Section 40, Block 194, Torborg pool. Stanolind Oil & Gas Company assigned the acreage, retaining 5/32 over-riding royalty interest and mineral rights below 800 feet. Henderson et al are obligated to carry on continuous drilling until 10 wells are completed, or the lease defined.

Another big oil well was scored on the east edge of the North Cowden field, Ector County. Rushwold Oil Company's C. C. Woods 2, NE SE T&P Section 36, Block 43, earned an initial rating of 4761 barrels after 670-quart nitro shot at 4240-4368 feet. It is a north offset to the company's Woods-South 2, which set a new potential record for the area early in April. Gulf Oil Corporation's Holt 1, SE SE SW PSL Section 1, half-mile west of the north end of the field, was drilling at 4560 feet and apparently above the water table. First free oil was logged at 4279 feet, revealing a low structural position.

Landreth Production Corporation's Frank Cowden 1-A, near C SW NW T&P Section 10, Block 44, T-1-N, Ector County wildcat, logged minor oil saturation at 4250 feet, and soft lime at 4273-80 feet, with an elevation of 3184 feet. It is 3 miles northeast of the Goldsmith field.

Parker Drilling Company's Parker-Texas Company 1, NW NE NE PSL Section 27, Block 16, Jordan area, Ector County, flowed 500 barrels oil through casing in 4 hours after 810-quart nitro shot at 3350-3675 feet.

A development obligation has been assumed by the Schermerhorn Oil Cor-

West Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Crane County (Gulf-McElroy)—		
Gulf, Crier-McElroy 37	689	2920
J. T. McElroy 192	613	2920
Crane County (Jordan)—		
Sinclair Prairie, University 4-24	827	3590
Crockett County (Crockett)—		
H. W. Black-Eubank Oil Co., University-Humble 4	58	1390
Ector County (Foster)—		
Landreth Prod. Corp., Johnson 1-C	403	4248
Ector County (Goldsmith)—		
Landreth Prod. Corp., Scharbauer 8-M	397	4195
Scharbauer 6-P	265	4194
Ector County (Harper)—		
A. G. Carter-John Naylor, Parker 8	526	4240
Ector County (Jordan)—		
Sinclair Prairie, University 4-79	1440	3650
Ector County (North Cowden)—		
Barnsdall, Smith 3	832	4210
Broderick & Calvert, Holt 4	2644	4439
Rush et al, Midland Farms 1	951	4430
T. P. Coal & Oil Co., Holt 2	780	4469
Howard County—		
Continental et al, Settles 1-A-S-135	*	1360
Merrick-Murphy & Lamb, Hyman-Chalk 7-B	1461	2959
Parten Drl. Co., D. H. Snyder 3	329	2852
Sinclair Prairie, Dodge 60	247	2775
Jones County—		
W. J. Healey & Walters, Daugherty 7	408	1933
Lynn County (Wildcat)—		
Baldridge et al, Alamo Lbr. Co. 1	†	4450
Pecos County (Payton)—		
British-American O.P. Co., Payton 18	273	2086
Pecos State Oil Co., Pecos River 5	263	2097
Pecos County (Wildcats)—		
Abell et al, F. A. Knapp 1	*	2503
E. M. Thomasson Prod. Co., J. A. Nations 1	*	2803
Magnolia, H. J. Eaton-Abell 1	*	2076
Upton County (McCamey)—		
Harvey-Sergent & Rutter, Cordova Union-Texas Co. 4-A	838	2255
Rife et al, Baker-Republic 7	1012	2242
Shell, Bowen 41	350	2185
Ward County—		
Daniels & Pardue, Hardage-Wilson 3	94	2431
Gulf, Hutchings 119	894	3080
Ja-Chel Oil Co., Buckner Orphan's Home 2	41	2075
Geo. McQueen & Clevenger, Sealy 1	310	3057
Sinclair Prairie, Archenhold 15	503	2990
Winkler County (Halley)—		
Skelly, Halley 29	1819	2845
Yoakum County (Wasson)—		
Danvers et al, Clawater-Amerada 1	538	5175
Gulf, Elliott 2	180	5215
Shell, Brand 2-A	1084	5130
Sinclair Prairie, Kendrick 2-A	1048	5150
Tide Water Associated, Koontz 3	1069	5135

* Failures; † Junked; ¶ Million cu. ft. gas.

poration in acquiring Amerada Petroleum Corporation's J. L. Johnson 160-acre lease, embracing NE¼ T&P Section 6, Block 42, T-2-S, northeast extension sector of the Foster field, Ector County, for $75,000, payable from one-fourth of the new production. The former contracted to start a test by mid-June, then complete a minimum of 3 wells annually until a total of 8 are drilled. Upon the liquidation of the oil payment Amerada Petroleum Corporation will be carried for one-eighth overriding royalty. A somewhat similar deal was made between the two concerns in 1936, involving SE¼ T&P Section 11, Block 43, T-2-S, with a bonus of $50,000, payable from one-fourth of the production. The latter property recorded 4 completions within the first 12 months.

Cooperating in Andrews County Test

Support given by 7 large companies, in the form of dry hole contributions, purchase of lease spreads and the exchange of leases, to a 5000-foot Permian lime test on the University of Texas fee, southwestern Andrews County, reveals the high rating placed upon the area as an oil prospect. The wildcat was recently contracted by Wm. F. Hanagan et al to be located C SW SW Section 25, Block 12, on an 80-acre site donated by Stanolind Oil & Gas Company. Three companies have pledged a total of $12,000 against a dry hole, and a substantial sum has been raised through lease sales. Drilling will commence shortly. The test is 5½ miles southwest of a small wildcat oil well.

Atlantic Refining Company and Osage Drilling Company's Tippett 2, northwest edge producer for the Seminole field, Gaines County, flowed 280 barrels of oil natural in 9 hours at 5260 feet. The well was awaiting results of 3000-gallon acid treatment, according to late reports. Osage Drilling Company and A. S. Everst's E. H. Jones 1, C SE NW PSL Section 20, Block A-7, northwestern Gaines County wildcat, logged trace of oil at 4945 feet, with an elevation of 3625 feet, and was coring at 5020 feet.

Sinclair-Prairie Oil Company et al's Tubb 3, offsetting Ordovician production in the Sand Hills field, Crane County, has been ordered plugged after encountering sulphur water in Ellenberger, logged at 6142-67 feet. A 6391-foot Ellenberger failure, situated 1980 feet north, was drilled on this unitized tract of 560 acres in October, 1937.

Humble Oil & Refining Company's Matador Land & Cattle Company 1, Dickens County wildcat in the northeast portion of the Permian basin, yielded salt water when tested through gun-perforated casing at 6905-11 feet. Additional testing is under way at a higher level in the Pennsylvanian series. This isolated project was drilled to 7053 feet, and 5½-inch was cemented at 6924 feet before plugging back to 6922 feet. The company's Crockett County Ordovician test on the Ozona-Barnhart Trap Company fee, 4 miles south of Ozona, was drilling black shale at 8345 feet.

J. MORGAN HOLT has severed his connection with Phillips Petroleum Company, effective May 22, to work for the Marland Oil Company of Oklahoma.

North Texas Fields

Second deep-lime oil pool in prospect in Baylor County.

Western Clay County area indicated as having deeper pay.

Wichita Falls.—Eastern Baylor County was given encouragement for a new producing horizon and possibly a second deep lime pool the past week. British-American Oil Producing Company's F. C. Green 1-L, near SE NW SE H&TB Section 8, A-1376, third test for the company's Seymour geophysical prospect, indicated a small producer from saturation at 3072-3107 feet. The well filled 450 feet with oil and rotary mud in 12 hours after perforating 7-inch casing at 3060-65 feet, and later bailed 10 barrels of oil and 15 barrels of water in 12 hours. Green 1-L was drilled with rotary to 4304 feet in an unsuccessful attempt for production in the Strawn series, and was plugged back to 3130 feet to run pipe for a test. The producing horizon has been tentatively identified as the Palo Pinto member of the lower Canyon. Additional perforations will be made opposite the main zone of saturation.

British-American Oil Producing Company uncovered production on its 16,000-acre Seymour block last December in completing F. C. Green 1-D, C SW SE T&NO Section 215, pumping 239 barrels of oil and 129 barrels of water in 36 hours from the Home Creek lime at 2580-2605 feet. Green 1-L, situated 3½ miles southeast of the discovery, missed this upper pay. The company's J. E. Cope 1, C SW NW T&NO Section 220, ¾-mile southwest of the discovery, passed up nominal oil saturation in Canyon at 2570-75 feet and 2805-21 feet in fulfilling a depth contract of 5598 feet. The Strawn and Ordovician proved dry. The hole was plugged back to 2850 feet, where 7-inch has been cemented to gun-perforate.

Archer County's bid for its first producer from the Bend lime will be given a showdown early this week. British-American Oil Producing Company's T. B. Wilson 1, NWc H&TC Section 12, Block 3, 3 miles south of Mankins, reported last week as showing for an oil well when formation tester was used in lime at 4660-95 feet, has cemented 8¼-inch pipe at 4739 feet. Pipe will be perforated opposite the saturated lime, and if necessary the formation will be acidized. The landing of pipe on bottom precludes the use of nitro.

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Carson County—		
Skelly, Schafer 92	¶1054	3140
Gray County—		
Magnolia, J. B. Morse 2-B	224	2730
S. & S. Oil Co., Benton 4	403	3294
Texwell Oil Corp., Frazier 2	662	3281
Hutchinson County—		
Murphy et al, Whittenburg 5	156	2896
Phillips, Perkins 21	136	2981
Texilvania Oil Co., Harvey 7	382	3070
Whittington Est. & Rubin, Whittenburg 2	¶24.8	2943

* Failures; † Junked; ¶ Million cu. ft. gas.

Wilson 1 is contracted to drill to 5300 feet.

Deep Oil Development Company and C. B. Christie's A. Schlabs 1, SWc Lot 2, Block 3, Clark & Plumb Sub-division, Scotland area, Archer County, has been temporarily abandoned in water at 4170-71 feet. It is a north offset to a Strawn pumper completed last year by Adams Oil & Gas Company on the Moer tract, which was purchased by the above partnership early this year. Schlabs 1 yielded a small amount of free oil from broken sand and lime at 4131-70 feet, and landed pipe at 4131 feet. G. E. Kadane & Sons' Joe Hemmi 1, NEc Lot 60, 3 miles southwest of Moer 1, is classed as a doubtful Strawn prospect as no shows were recorded in drilling to 4400 feet on a 5600-foot depth contract.

A deeper oil horizon for the Burns pool, original Strawn discovery area for western Clay County, is considered virtually assured by the numerous shows logged by Shell Oil Company's W. A. Davis 1, which failed to produce in the 4400-foot upper Strawn zone although 660 feet south of the discov-

North Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (Ford-Sikes)—		
Sikes et al, Anderson 1	†	4414
Archer County—		
Deep Oil Dev. Co.-Christie, Schlabs 1	*	4171
Clay County—		
Perkins-Cullum et al, C. T. Taylor 1, blk 42	*	1792
Sussex Oil Co., Shumake 21, blk 3	*	1373
Cooke County (Walnut Bend-Best)—		
Sinclair Prairie, Best 7	876	4948
Cooke County (Wildcat)—		
Cliff Camp Drl. Co. (was Means & Howard), W. T. Lynch 1	*	4909
Denton County—		
Wells-Dodson & Oearson, C. L. Dailey 1	*	1980
Haskell County—		
Fain-McGaha Oil Corp.-P. S. Kendrick, T. G. Hendrick 1	*	2854
Jack County—		
Calihan & Jackson, Hoefle 4	10	420
Compton et al, R. Wilson 4	*	420
Perrin et al, J. S. Rhodes 4	648	3135
Walton et al, W. D. Moore 3	†	380
Jack County (Wildcat)—		
Sneed & Senter, G. L. Jones 1	*	2700
Montague County—		
Yeargin et al, Bouldin 3	10	822
Montague County (Wildcat)—		
Staley, Nunley 1	*	5810
Wichita County (K-M-A)—		
Ven-Mex Oil Co., Big Wichita River 9-A	1016	3816
Wichita County—		
Mitchell & Buzzard, Mitchell 13, blk 4	5	443
W. B. Omohundro et al, Hodges 12	*	740
Seaboard, Warren 3	*	715
Shell, Robinson 1, blk 310	*	1991
Wilbarger County (Wildcat)—		
Davis Oil Corp., J. A. Farley 1, sec 81	*	1501
Young County—		
F. J. Albritton et al, Gilmore 11, blk 14	6	585
Louis Moore et al, J. A. Cole 2, sec 1465	*	761
D. W. Power et al, Larimore 6, sec 253	8	580
Underwood Drl. Co., et al, Campbell 38-C, sec 1483	*	899
W. E. Prod. Co., J. J. Grubbs 1, sec 647	597	3895

* Failures; † Junked; ¶ Million cu. ft. gas.

ery. Davis 1 logged broken sand and shale at 4942-5008 feet, carrying saturation at intervals, and was drilling at 5016 feet, with the last 8 feet identified as oil sand. It will likely be carried to the Ellenberger before running electrical formation survey to determine casing point and levels to be perforated.

Sinclair Prairie Oil Company's Best 8, east edge location for the Walnut Bend pool, Cooke County, proved a lower section of the Strawn for oil production in swabbing 105 barrels of oil in 6 hours. Later the well yielded 214 barrels of oil in 24 hours. Production is from saturation at 5143-71 feet followed by shale to 5173 feet. Unless flowing production is available when tubing is landed, this test may plug back to complete in the regular pay at 4943-62 feet. The absence of water in Best 8 reveals that the company's 7 flowing wells are considerably above the water table, provided it is constant in the area. Cox & Hamon's K. Neu-The Texas Company 1, an east outpost, was drilled at 2500 feet.

The Nocona townsite area, Montague County, has two active tests. Rogers & Rogers' C. Astley-The Texas Company 1, north offset to their discovery, was drilling at 3750 feet. Bridwell Oil Company et al's Reynolds 1, mile northeast of Nocona, was drilling at 1220 feet.

Seek to combine West Texas fields

Gulf Oil Corporation has requested that the Waddell, Penwell and Jordan fields in Crane and Ector counties be joined together for proration purposes. This application was presented at a hearing before the Texas Railroad Commission last week. The Gulf was joined in the application by Southland Royalty Company, Federal Royalties, Inc., and M. F. Henderson, all of whom own royalty in the area.

The plan was opposed by Humble Oil & Refining Company, Shell Oil Company, The Texas Company, Sinclair Prairie Oil Company and several other operators in the field who objected to enforcing rules for the Penwell field in the newer Jordan and Waddell fields.

P. P. Gregory, consulting petroleum engineer, presented evidence intended to show that the three fields were a continuous unit separated by a saddle which did not present an effective barrier to the migration of oil, gas or pressure. He contended that the presence of a relatively uniform pressure gradient from south to north was indicative of this condition and also insisted that the production in each field was from the identical horizon.

The other operators insisted that the fields produce from different horizons and that they should be treated as separate units for this reason.

The Gulf proposed that a uniform spacing rule be provided calling for one well to 20 acres with a 20-acre tolerance. Wells might be spaced within 330 feet of lease lines and 660 feet apart. Proration would be on acreage and potential with 75 percent allocated to acreage and 25 percent to unit potentials.

A similar plan was presented last year, but the hearing was recessed and no action was taken by the railroad commission.

Texas permits to drill total 272

The Texas Railroad Commission last week approved permits for drilling 272 new wells in Texas, 129 more than were allowed the week before.

Operators in the East Texas field obtained 30 permits, including 25 in Gregg, four in Rusk and one in Smith County. There were 13 locations approved in the East Central Texas area.

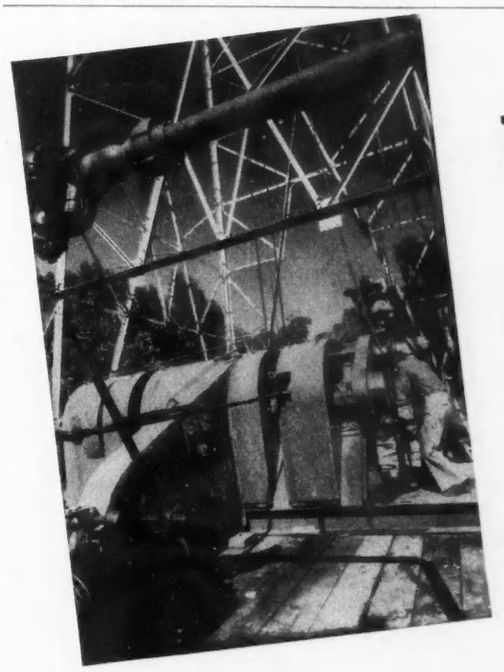
Gulf Coast led the list with permits for 77 wells, including 16 in Harris County, while Southwest Texas operators reported 46 permits, with 19 in Zapata County. The commission approved 32 new locations in West Texas, including 13 in Ector County. Ten locations were reported from West Central Texas.

North Texas producers were permitted to drill 60 new wells, including 17 in Wichita, 16 in Young, and 10 in Archer County. Four permits were allowed for wells in the Panhandle area.

Naylor hearing is recessed indefinitely

The Texas Railroad Commission has postponed indefinitely its hearing on the H. M. Naylor well in Fort Bend County. The hearing had been called to fix operating rules for the field, but Naylor did not appear.

In a letter to the commission he requested an allowable of 300 barrels daily for wells in this field and 20-acre spacing.



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East Texas Fields

6370 wells in East Texas non-flowing producers

Kilgore.—An unofficial survey of the well pumping situation in East Texas field accounts for 6370 wells, or about 25 percent of the total, as being on pump, agitating with tools or swab, else utilizing air or gas lifts. The report lists 19,455 flowing wells, and 215 accounted for dormant wells.

Waskom north edge test at 6200 feet

Shreveport.—Arkansas Fuel Oil Company was testing its north edge operation in the shallow Waskom field, Harrison County, Texas, in the Travis Peak after perforating 5½-inch casing set on bottom at 6200 feet in Davis 1, James Adams Survey. Casing was perforated from 5970 to 6000 feet and from 6150 to 6185 fet with 198 shots and 6000 gallons of acid used. The operation previously had shown wet gas in drill-stem tests in the Travis Peak.

Two new locations were made last week in the Jefferson end of the Rodessa district, Marion County, near Avinger, in a wildcat area of the same county.

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Osher Goldsmith et al, A. Wiley 4 (109.64-ac)	600	3751
Roosth & Genecov, G. Curbo 3 (120-ac)	100	3615
Termo Oil Co., F. B. Fox 13 (25.48-ac)	1500	3703
Kilgore Area—		
Humble, M. E. Minor 17 (123.7-ac)	2500	3701
Texas Co., W. A. Baxter 16 (96-ac)	3000	3638
Longview Area—		
Cushing Drl. Co.-Joe Long, Owens 40-A (208-ac)	2400	3607
Owens 10-C (72-ac)	1500	3656
General American-Sun, Bingham 19 (99.56-ac)	7500	3512
Anderson County (Long Lake)—		
F.H.E. Oil Co., A. McKenzie 2 (67½-ac)	750	5325
Hunt Oil Co., Robinson-Hombs (Stanolind) 1-B	1000	5343
Tide Water-Seaboard, W. V. Keeling 2	¶115	5335
Shaw-Cern 11 (1029.4-ac)	¶115	5340
Henderson County (Flag Lake)—		
Texas Co., J. P. Tarkington 2 (50-ac)	*	3030
Limestone County (Wildcat)—		
Gant et al, Vol de Long 1	*	2975
McLennan County (Wildcat)—		
Thompson et al, Goodman 1	*	815

* Failures; † Junked; ¶ Million cu. ft. gas.

Navarro Crossing hearing postponed

The Texas Railroad Commission has postponed its hearing on the Navarro Crossing field, Houston County, The delay was ordered when some operators in the area complained that they did not receive notices.

Taft gets 345-barrel increase

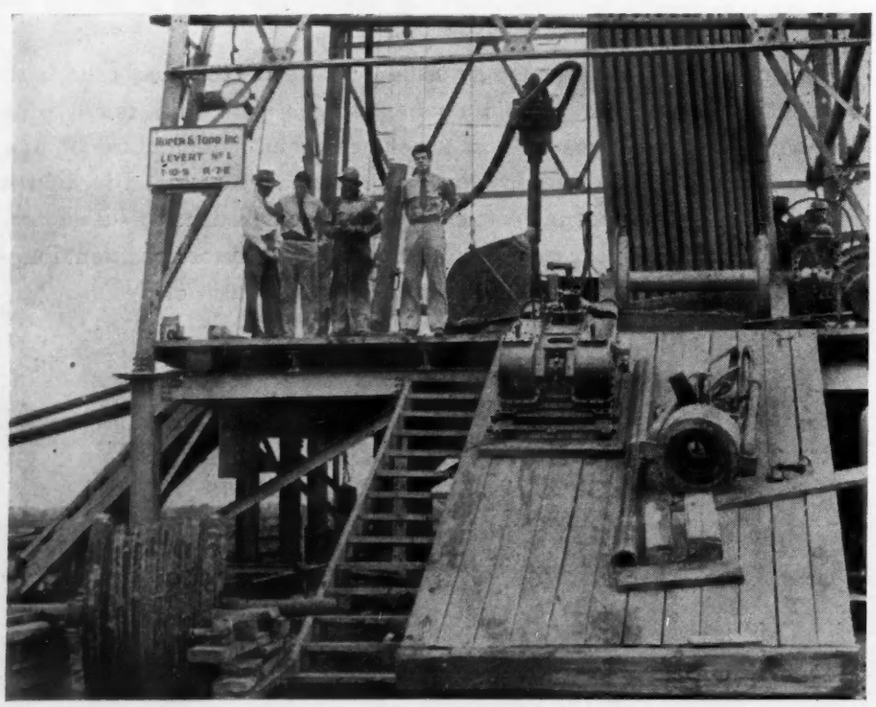
An increase of 345 barrels daily in the allowable for the Taft field, San Patricio County, was ordered by the Texas Railroad Commission last week. Effective May 10, the field allowable was increased to 2925 barrels.

Hoffman given 476-barrel allowable hike

An order issued by the Texas Railroad Commission last week increased the allowable in the Hoffman field, Duval County, effective May 10. The new allowable of 5598 barrels is 476 barrels higher than was provided in the order issued May 1.

Clay County hearing May 19

A hearing to fix operating rules for wells to be drilled in Clay County around the new J. S. Bridwell No. 1 Furd-Halsell, has been scheduled by the Texas Railroad Commission for May 19 at Austin.



L. C. Cummins, scout for Continental Oil Company; Joe Uri, scout, Arkansas Fuel Oil Company; C. F. Hickman, driller for Erle P. Halliburton, Inc.; and Axtell J. Byles, Jr., scout for Tide Water Associated Oil Company, as they gather on Roper & Todd's test in the Eola field of South Louisiana.

United Gas takes long term lease in Houston

United Gas Corporation has virtually completed negotiations for a 15-year lease on a Houston office building, and will establish general headquarters therein as soon as arrangements are completed.

The move is in line with the company's program of consolidation in Houston of all operations headquarters for Texas, Louisiana, and Mississippi. Plans call for establishment of the Houston Gas & Fuel division of the company in the same building, and space will be leased to Union Producing Company, and United Gas Pipe Line Company. Provision will be made this year for new office space for United Gas Corporation subsidiaries, Union Producing Company, and United Gas Pipe Line Company, in the Shreveport area.

Relocation of the general offices is a further step in the reorganization plans which started this spring with the construction of a local distribution plant in Houston. The plant, which will be completed this summer at a cost of $175,000, will consist of distribution offices, warehouse, meter shop, and garages, on a five-acre lot.

Construction of a seven-story brick structure to house offices of Union Producing Company was begun in Shreveport last week. The location, in a residential area, is at Jordan Street and Fairfield Avenue, on the site of the Youree Estate home, which was demolished.

Propose bonus for finding oil or gas in Florida

Tallahassee, Fla.—A $50,000 bonus to the first person or firm finding oil or natural gas in commercial quantities in Florida has been proposed by three members of the senate, who declare the state would be greatly aided by establishment of an oil or natural gas production industry in the state. Advancing the proposal are Senators Ward of Fort Myers, Kelly of Fernandina, and Beacham of West Palm Beach.

Sullivan City hearing postponed

The Texas Railroad Commission has postponed indefinitely its hearing on the Sullivan City field, Hidalgo County, which had been set for May 8. The delay was requested by operators who said they wanted more time to prepare data.

Sugar Land allowable raised 1304 barrels

The Texas Railroad Commission has increased the allowable for the Sugar Land field, Fort Bend County, to 4594 barrels, effective May 10. This is a raise of 1304 barrels above the allowable set in the order of May 1.

Southwest Texas Fields

West Ranch looms as next drilling boom locality.

Crosby testing possible new sand at Francitas.

Corpus Christ.—West Ranch, prolific producing area in Jackson County, looms as the new central point of drilling along the South Texas Gulf Coast as plans are made for a number of key outpost wells. Magnolia Petroleum Company has drilled a series of wells from a point, east to west, covering two miles on the West Ranch, securing excellent Marginulina production. The latest extension, placing the field within ½ mile of other leases, has created considerable interest.

R. J. St. Germain, J. C. Nelson, Sun Oil Company, Ohio Oil Corporation, Magnolia Petroleum Company, Darby Petroleum Corporation, Shell Petroleum Corporation and others have holdings within one mile of production and possibly upon the structure. Their tracts are so split that an offsetting campaign of considerable importance may be anticipated.

The Magnolia extension well is A-10 West, which found the oil sand at 5121-35 feet and flowed 352 barrels of pipe line oil per day through 5/32-inch choke under pressures of 800 pounds on tubing and 1675 pounds on casing. Gas/oil ratio was 431 to 1.

In Francitas field, also Jackson County, Housh-Thompson's Broughton 1, block 6, found only sand stringers in the 7900-foot level and was going ahead below 7961 feet. Mills Bennett was preparing to test Lowarance 1 in a new 8900-foot sand after two squeeze jobs. Wynn Crosby's Kopnickny 1 was still testing a possible new 7900-foot sand.

About two miles north of Luby field, Nueces County, and a separate structure, Seaboard Oil Corporation of Delaware was going ahead below 7200 feet in LaPrelle 1. It will be carried to 7500 feet, plugged back and completed in the 4300-foot sand which showed for a commercial producer to open a new field.

Jim Wells County, hottest sector of the Gulf Coastal trend, had its interest centered around the Camoda field. Tom Graham took a farmout from the Magnolia Petroleum Compny on the Muil lease north of the discovery, and is moving in rig. The discovery well, completed in a Jackson sand through perforations 5628-33 feet, flowed 32 barrels of crude in 18 hours through 3/32-inch choke with 850 pounds tubing and 1300 pounds casing pressures. The producer is Parr Drilling Company's Hoffman 1, in the southeast corner of the Springfield townsite.

Offsetting the Magnolia City field discovery on the south, Irwin et al's Garcia 1, was coring for the 5400-foot sand producing in the test to the north. Sev-

Goliad County wildcat in Maetze area to perforate

Beeville.—Crude oil production from the basal Yegua or top of the Cook Mountain is apparent in the Maetze area of Goliad County with preparations being made to test H. D. DeArman et al's O. G. Drier 2. The well is bottomed at 5885 feet where casing is set, but perforations will be made in a sand series in an effort to complete an oil producer.

The above test is located 300 feet due north of Drier 1, drilled to 5535 feet and junked after a blowout. It was plugged back and completed as a wet gasser at 3806-9 feet. Other wells drilled in the field made gas-distillate producers in shallow Frio sands.

The new operation found a gas sand at 4600-40 feet, another at 5290-97 feet and 5379-89 feet. Oil sands were encountered at 5551-70 feet and 5762-70 feet. The first of the oil sands is in the Yegua formation, while the latter may be in the top of the Cook Mountain.

The discovery is important as it will open a large new territory to development. The Maetze structure is large and well divided among leaseholders, hence a heavy drilling program may result from an oil discovery.

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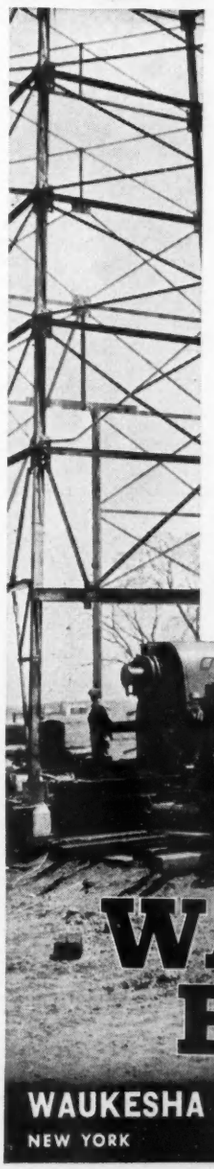

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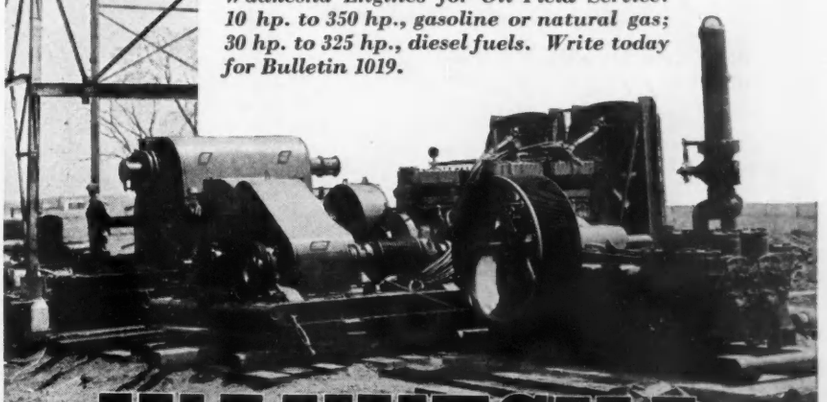

WAUKESHA ENGINES

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eral other wells are projected for the new field immediately.

Texas Gulf Producing Company has acidized perforations in Perez-Garcia 1, prospect northwest of Alice, in an effort to increase the flow of oil. The well, first tested through perforations 6485-6530 feet, showed several hundred feet of fluid, oil and water, but failed to build up pressure. The drill stem test at this level, however, indicated a commerical producer. It is believed that a new test will be drilled regardless of the outcome of the present operation.

J. F. CAILLOUX, president of American Iron & Machine Works Company, Oklahoma City, has moved his home to Houston.

Rincon distillate field gets two-mile extension

Mission.—An extension of two miles to the northeast in the Rincon Vicksburg distillate field of Starr County, is considered assured with Transwestern Oil Company and Rowan & Hope's W. I. Cameron, SW Section 228, showing gas in several zones. It found a sand at 4032-40 feet and another at 4114-26 feet, both showing gas and distillate. A drill stem test of the first level developed 380 pounds pressure, some mud and distillate in 7 minutes, while the lower showed 450 feet of mud and distillate. The hole was being cored ahead.

Another important prospect is Magnolia Petroleum Company's Garcia 1, 2 miles northeast of Barboacoas field, Starr County, which was drilling below 6500 feet. A blowout at 6082 feet delayed operations several weeks.

Phillips Petroleum Company completed the second oil producer in the Sullivan City sector of Samfordyce, Hidalgo County. Flores 1, originally drilled to 9732 feet, was plugged back and casing perforated at 3445-50 feet, the Fohs sand, and it

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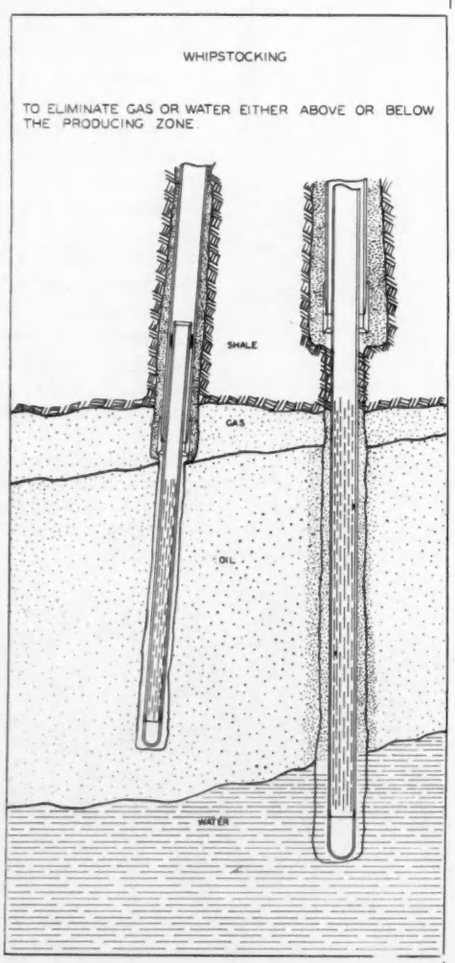
Recent research and developments in reservoir engineering have provided very accurate methods of determining the most economical and practical means of withdrawal from any given formation. These developments are constantly being brought to use. Consequently, in a great many fields, the facts and procedures learned since their discovery provide new tools for economical oil production.

With all facts available, and a production program determined, it is often advantageous to workover the older wells and, by redrilling and resetting, eliminate excessive gas/oil ratios or water withdrawals. Such a procedure results in increased recovery, and production economies which can be definitely determined.



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KINZBACH

South Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bee County—		
Humble, Gox 1, (wc) M. Fox sur...	*	5512
Brooks County—		
Superior, Mestina 1 (wc) N. Alta Mesa	*	5538
Dewitt County—		
Whitex, Poetter 2, Slick	*	4430
Hidalgo County—		
Messenger, Chapa 1, Samfordyce...	¶20	3986
Jackson County—		
Lewis, Drushel 8, Cordelle	350	2720
Jim Wells County—		
Gravis & Doran, L. Muil 1, (wc) Clark, opens new sand	500	5330
Osborn & Fleet, Bankers Mortgage 1, E. Alice	¶10 & 50	5308
Karnes County—		
Aid, Kaiser 1, (WC) Potevent sur..	*	2502
Live Oak County—		
Coquat, Rosebrock 2, Oakville....	62	2794
Nueces County—		
Bryant, Rogers 1, Clara Driscoll...	400	5703
Seaboard, Luby 45, Luby	350	4362
Killam, Smith 1, (WC) sec 30	*	7512
Southern Minerals, King 1-A, (WC) Richard King, opens new sand...	1500	5416
Sun, Butts 2, Luby	500	5059
Union, Tom Harper 1, (WC), N. Agua Dulce, opens new sand....	106	5762
Kinzie 1-B, Agua Dulce	¶20	4913
Wellington, Sevier 4, Clara Driscoll, deepened from 3815 ft.	35	5846
Refugio County—		
Morgan, Mitchell 4-A, Refugio (Mission River)	60	6845
Quintana, O'Connor 4-B, Melon Creek	500	5886
San Patricio County—		
Grote & Corgey, Scrivner 2, McCampbell	1200	7150
Sikes 2, McCampbell	1100	7160
J. D. Whitlow 2, McCampbell...	1250	7150
Houston, Baldwin 4-A, E. White Point	500	5675
Humble, Countiss 2, E. White Point	500	5673
A. O. Morgan, Smith 1, (WC) blk 22, Welder sub	*	7021
Nueces, Kellam & Roper 1, E. White Point	†	1000
Muil & Green 1, E. White Point..	500	5684
Plymouth, Malonel, E. White Point.	500	5673
Shell, Kirk 3, E. White Point....	500	5636
Sinclair Prairie, Womack 3, E. White Point	500	5675
Slimp & T. Graham, Meller 2, McCampbell	1000	7169
Victoria County—		
Barnsdall, McFaddin 27, McFaddin.	500	4417
Gulf, Traylor B-7, Heyser	650	5485
LAREDO DISTRICT		
Duval County—		
Cuellar, Cuellar 6, Hoffman	82	2566
Dutex, State 6, Piedra Lumbre....	181	2259
Glasscock, Garcia 1, (WC) Concepcion Grant	*	6517
Howell & Cunningham, Parr 1, (WC) San Andres Grant	*	6542
Magnolia, Duval 23 (201), Eagle Hill	454	2137
Duval 25 (203), Piedra Lumbre..	385	2013
Miller & Sons, Miller 7, Longhorn..	500	4033
Republic, Society for Propagation of Faith 2, (WC) sur 549	*	4113
Saltmount, Ruig 3-B, N. Sweden...	350	4795
Stewart & Nye & McKenzie, Peters 5-A, Rancho Solo	*	1945
Texas Gulf, Dunn 1, (WC) sec 378..	*	6022
Jim Hogg County—		
Humble, Atwood 1, Colorado	*	3080
Kelsey Bass 12, Kelsey	400	4736
Neal & Shaw, Armstrong 1, (WC) sec 89	*	4006
McMullen County—		
E. M. Jones, Ezzell 78, Ezzell	41	1579
Ezzell 92, Ezzell	*	1490
Ezzell 93, Ezzell	*	1559
Marion, Lark 10, Calliham	*	1339
Starr County—		
Dodd, Wood 9, S. Ricaby	*	2700
Sun, Olivares 4, Sun	*	5218
Zapata County—		
Interstate, Lopez 4, S. Mirando Valley	85	1810
Caldwell County—		
E. H. Hughes, Hardeman 3, Luling.	60	2196
Medina County—		
Carle et al, Bendele 1, (WC) sur 593	*	1207
Travis County—		
Fields & Paine, Carlson 1, (WC)....	*	1305
Wolters & Wolters, Johnson 1, (WC) Hahn sur	*	978
Williamson County—		
Burns, Hanson (WC) Buerly sur..	*	1550

* Failures; † Junked; ¶ Million cu. ft. gas.

flowed 108 barrels of 25.6 gravity crude through ⅛-inch choke in 24 hours under pressure of 925 pounds on tubing. John Messenger and Fohs Oil Company completed wells 3000 feet northeast and east of the discovery, respectively, as gassers in the same sand to widen production. Both wells sprayed some crude.

Flour Bluff Oil Corporation has awarded contracts to Falcon Seaboard Drilling Company for three 10,000-foot slim holes on a block in Willacy County east of Port Isabel. First of the three tests is being commenced.

Pettus sand field found near Thomas-Lockhart

Laredo.—J. B. Blanchard apparently has opened a new Pettus sand oil field for the Benavides sector of Duval County with Atlee Parr 1, which has set casing after encountering an excellent oil showing. The well cored hard sand at 4710-12 feet and oil sand 4712-15 feet. A drill stem test of the entire section through ⅜-inch chokes, top and bottom, recovered 450 feet of oil and 30 feet of mud and salt water under 240 pounds pressure in 20 minutes.

The discovery is located 2632 feet from the east line and 466 feet from the south line of the T. C. Rogers survey and is eight miles west of San Diego. It is about two miles southwest of production in the Thomas-Lockhart field, also productive from the same zone.

Rutland Oil Company's wildcat, failing to find production in the Hiawatha sand at 5952-67 feet, has been abandoned at 6143 feet. It tested for several days in an effort to open a new pool about 7,000 feet southeast of the Longhorn area.

E. A. Thompson et al's Ramirez 1, south of the Lopeno field, Zapata County, is attempting to open Queen City sand production at 2416-32 feet. It swabbed oil and water, apparently drilling fluid and acid solution, after which a jetting line was laid for further tests.

Seek repressuring permit for Scarborough field

Magnolia Petroleum Company has requested a permit to perform pressure maintenance and repressuring operations in the Scarborough, Kermit and Colby sand areas of the Keystone field. This application was heard by the Texas Railroad Commission last week and was not seriously opposed by other operators in the area.

Magnolia contemplates an experimental repressuring plant with a 1500-horsepower unit which will cost about $200,000. There are two sands producing in the fields, and it is planned to attempt repressuring of the Yates sand first, using approximately 10,000,000 feet of gas daily. The company said it planned to use producing oil wells as gas injection wells and asked that the railroad commission assign to other wells on the same lease the allowable which could not be produced while a well was used for injection purposes.

Heyser allowable is increased 1719 barrels

An increase of 1719 barrels in the allowable for the Heyser field, Calhoun County, is provided in an order issued by the Texas Railroad Commission last week. This provides an allowable of 12,561 barrels daily, effective May 10.

Texas Gulf Coast

Texas Gulf opens new Harris County field at Aldine.

Deep Frio sand found on southwest flank of Fannett.

Houston.—A new oil field was added to this district last week when Texas Gulf Producing Company completed Weary 1 in the Aldine area, Harris County, after perforating with 14 shots from 6824 to 6834 feet, Cockfield formation. On a 24-hour potential test it flowed 130 barrels of 37.4-gravity oil through ⅛-inch choke, with a tubing pressure of 950 pounds and a casing pressure of 1260 pounds. Gas/oil ratio was 617 to 1.

Several new locations have been planned for the area, the first being for O. D. Heath 1, 330 feet east and 884 feet north of the southwest corner of W. C. R. R. Section 2. Hargrove 1, another location, is 1729 feet north and 439 feet west of the southeast corner of the S. L. Noble Survey, about 1500 feet southwest of the discovery well.

Texas Gulf Producing Company has purchased Earl Hankamer and D. C. Cheesman's undivided half interest in 628 acres at the new Aldine field, Harris County, for a consideration of $500,000, part in cash and part out of oil. The discovery well was included in the deal.

A new producing sand was discovered on the southwest side of Fannett field, Jefferson County, by Gulf Oil Corporation's Thomas 1. The well was perforated with 36 shots from 7660 to 7680 feet and came in flowing 100 barrels of distillate daily through ¼-inch choke, with a tubing pressure of 3100 pounds and a casing pressure of 3250 pounds. It has been shut in for storage. The new sand is described as the first in the Frio formation. It is over 1000 feet deeper than those found on the other flanks of the field. Thomas 1 is also the deepest well ever drilled in the field, having gone to 7949 feet in salt, topped at 7943 feet.

Washing Wildcat

At Sandy Point, Brazoria County, Hamman Exploration Company is washing Darrington State Prison Farms 1, A. McFarland Survey, at 8917 feet. Information on the wildcat is being withheld by the company. A test made around 8887 feet showed a small amount of gas.

On the Algoa prospect, Brazoria County, Wynn Crosby's Wilson 1, A. G. Reynolds Survey, was drilling below 10,250 feet at the close of the week and will be drilled to 10,500 feet, contract depth, before abandoning. It was reported that the wildcat cored a slight oil show at 10,160 feet, but this could not be confirmed. Crosby is preparing to make location for H. A. Paine 1, 7000 feet north of Wilson 1.

Hebert & Smith will drill another wildcat in Jefferson County. Location was made for L. D. Fontenot 1 in the North Cheek area on a Sun Oil Company farm out. It is 466 feet out of the most northerly southwest corner of Section 17 of the H&TC Survey.

On the southeast flank of Esperson field, Liberty County, General Crude Oil Company is preparing to make another production test on Esperson B-2, 1000 feet west of Esperson B-1, which discovered a new sand for the field. B-2 was tested at 6998 to 7025 feet and flowed 450 barrels of fluid, five percent water, through a ⅛-inch choke, with a tubing pressure of 700 pounds and a casing pressure of 1360 pounds. The perforations have been squeezed with cement. The next test will not include the bottom 11 feet at 7025 feet. The discovery well for the deep sand on the flank of the field was completed at 7305 to 7341 feet.

Deep Test for Conroe

E. I. Thompson will attempt to open Wilcox production at Conroe field, Montgomery County, the largest field in the Texas Gulf Coast, with W. D. Granger et al 1. Location is 831 feet east of the west line and 360 feet north of the south line of the T&NO Section

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Anahuac—		
Humble, Middleton 40	707	7080
Bryan Mound—		
Texas Co., Freeport Sulphur Co. 7	*	3617
Cheek—		
Humble, Broussard Trust 3	168	7722
Shell, Stienhagen 1	101	7723
Clear Lake—		
Humble, West Fee C-7	¶2½	5812
Dickinson—		
Bennett Oil Co., Strom 2	116	8150
Coast Pet. Corp., M. Stewart 13	214	8653
Eureka—		
Jack Frazier, Shady Acres 2	622	7719
Fairbanks—		
Amerada-Stanolind, Spaulding B-2	108	6862
Johnson et al, Charters 3	153	6835
Sinclair Prairie, Goodykoontz 3	151	6847
Union Prod. Co., Whithead et al 4	155	6855
Fannett—		
Gulf, Thomas 20	100	7680
Friendswood—		
Humble, G. Keller 1	493	6047
West Fee B-23	360	6040
West Fee B-24	600	6070
Hastings—		
Humble, Alexander 7	600	6050
Hull—		
Republic, Dolbear 165	76	1698
Magnet—		
Humble, Cockburn 12	253	5539
Grey & Wolf, State 1-7	132	5559
Pickett Ridge—		
Gilcrease Oil Co., Kubela 4	104	4700
Satsuma—		
Amerada-Stanolind, Jacobs A-1	*	6908
Thompsons—		
Gulf, Booth X-16	*	3526
Withers—		
Texas Co., Broussard 8	103	5545
Harris County—		
Housh & Thompson, Hine 1, Battle Ground prospect, A. McCormick sur	*	6523
Midwest Royalty Co., Westmoreland Dev. Co. 1, Bellaire prospect, J. Wells sur	*	9754
Texas Gulf, Weary 1, Aldine area, E. Farrias sur	120	6834
Tyler County—		
J. C. Bonham, Southwestern Lbr. Co. 1, Rockland area, E. G. McReynolds sur	*	4353

* Failures; † Junked; ¶ Million cu. ft. gas.

14. On a 44-acre tract, the well is projected to 8500 feet; Wilcox sand is expected around 8200 feet.

The second producer for Caplen field, Galveston County, was completed by Sun Oil Company, which discovered the field. Hudnall 1 was perforated with 30 shots from 7388 to 7404 feet and came in flowing an estimated 30 barrels of fluid per hour, seven percent water, through a quarter-inch choke. Tubing pressure was 1125 pounds and casing pressure was 1500 pounds.

Probably the first twin well to be completed at League City field, Galveston County, will be Geo. Echols' Ross-Stewart 4 on the same 20 acres with Ross Stewart 2, completed in a deeper sand. The well cored a gas sand from 8652 to 8681 feet and oil sands from 8681 to 8702 feet. Casing is being set.

On the Needville prospect, Ft. Bend County, Woodland Oil Company announced location for H. Berg 1, 1650 feet northwest and 330 feet southwest of the east corner of an 80-acre tract in H&TC Section 25. The wildcat is being drilled in the area where a well attempted to blow out.

East of Richmond, Ft. Bend County, Royal Oil & Gas Company and Pat Rutherford's Bertrand 1, J. Wilkens Survey, was drilling at 4950 feet in salt water sand last week. The wildcat also had salt water sand at 4803 to 4812 feet.

Superior Oil Company has made its second wildcat location in the Texas Gulf Coast. Shirley A. Beard 1 is 330 feet northeast of the southwest line and 2465 feet southeast of the northwest line of E&TC R.R. Survey, Abstract 111. It is in the Long Point area of Ft. Bend County.

On the outskirts of Houston City limits, Midwest Royalty Company abandoned Westmoreland Development Company 1, Bellaire prospect, J. Wells Survey, at 9754 feet. The wildcat cored several gas sands in the Cockfield formation and at one time attempted to blow out around 9450 feet.

Another failure was reported on the San Jacinto Battle Ground prospect, Harris County, when Housh & Thompson abandoned Hine 1, A. McCormick Survey, at 6523 feet. Salt water sands were cored from 5692 to 5722 feet and from 6350 to 6364 feet. Their No. 9 Robbins 1, Smith Point prospect, E. T. Branch Survey, Chambers County, appears to be a dry hole. It is down to 9087 feet and all sands have shown salt water. A thick sand was logged at 8956 feet.

Superior Drilling Company is preparing to drill another wildcat in the Glen Flora area of Wharton County. Sam Hamburger 1, a 6000-foot project, is 450 feet from the west line and 495 feet from the south line of W.C.R.R. Section 65.

Shut-downs lifted in three West Texas fields

The Texas Railroad Commission last week announced an order lifting the Saturday and Sunday shut-down in three West Texas fields, which supply oil to the Cosden Refinery at Big Spring.

Howard-Glasscock, Snyder and Iatan East Howard were permitted to produce on May 6 and 7.

South Louisiana

Superior finds Miocene sand field in Grand Lake.

Golden Meadows chalks up new sand and extension.

Lake Charles. — Superior Oil Company opened a new oil field in Cameron Parish the past week when State Grand Lake 1 came in flowing pipe line oil from Miocene sands. This new strike was a surprise to many because it was drilled on a block in an area where Pure Oil Company had drilled several deep wildcats. The well was drilled to 9179 feet, where 7-inch casing was set. A total of 162 feet of oil and gas sands were cored at different levels. The best sand, 60 feet thick, was cored from 8365 to 8425 feet. Casing was perforated with 120 shots from 8365 to 8392 feet and liner was set from 8345 to 8393 feet, the bottom 35 feet of the liner being slotted. Two and one-half inch tubing was hung at 8256 feet. On the first 24-hour gauge the test flowed 384 barrels of 32.8 gravity oil through 5/32- and 13/64-inch chokes. Tubing pressure was 1250 pounds; gas yield 150,000 cubic feet.

Grand Lake is under lease to Superior Oil Company, which has around 72,000 acres in the area. Pure Oil Company owns all the leases on land. The whole prospect was once owned by Pure Oil Company, which worked it with geophysics. Superior Oil Company took the lake and rechecked it with reflection seismograph.

Running Electric Log

Falcon-Seaboard Oil Company's Hobgood 1 at Pikes Peak prospect, Pointe Coupee Parish, was running an electric log at 7526 feet after coring 90 feet of sand at 7249 to 7339 feet which showed salt water. This sand is believed to be the Wilcox. However, reports are that the wildcat logged the top of the Wilcox around 7420 feet. The wildcat is slated to drill 500 feet into the Wilcox.

Bel Estate's wildcat on North Elton prospect, Allen Parish, showed salt water on the first drill stem test last week. Perforations have been cemented for another test. Fee 1 was drilled to 9010 feet and 7-inch casing set at 8560 feet. Cement was drilled out to 8555 feet and the well perforated with 12 shots from 8549 to 8552 feet. A 30-minute drill stem test through quarter-inch choke showed 18 stands of salt water with a trace of distillate. Other cores showed: sand with an odor of oil at 6016 to 6035 feet, broken sand with oil show from 6035 to 6051 feet, salt water sands from 6051 to 6081 feet, and gas sands from 6257 to 6287 feet.

New Sand and Extension

A new oil sand was discovered northeast of production at Golden Meadows field, Lafourche Parish, when Mar-Tex Oil Company's Falgout 1 came in flowing oil and wash water from perforations at 7925 to 7955 feet. The fluid was flowing into burning pits through a quarter-inch choke with a tubing pressure of 900 pounds and a casing pressure of 300 pounds. The Texas Company discovered the field last year by completing a well at 8500 feet. Mar-Tex Oil Company is moving in material for their second well, Falgout 2, 933 feet north of the extension well. The Texas Company's L. L. & E. Golden Meadows 1 was perforating casing at 10,769 to 10,771 feet for a test. A test at 11,765-85 feet recovered salt water.

On the Lake Lery prospect, St. Bernard Parish, Carter, Brian and Molero made location for Delacroix Company 1, 3200 feet northeast along the north line of Section 129-14s-14e from the west corner and 450 feet southeast at right angles.

First Eola Failure

The first failure for Eola field, Avoyelles Parish, is J. Edward Jones' Haas Investment Company 1, 3900 feet southeast of production. The hole was abandoned at 8646 feet in salt water sand, after having cored a small amount of oil sand above the water level. Jones may move rig east of production on the Barone tract. Sid Richardson's Haas Investment Company 4 showed 100 percent salt water on a production test last week when casing was perforated with 300 shots from 8496 to 8570 feet. Perforations have been cemented for another test. Richardson has made location for Pierce 1, 2181 feet north and 4506 feet west SEc Section 6-2s-3e.

In Iberville Parish, Shell Oil Company's Natalbany Lumber Company 1 was installing larger blowout preventer last week at 10,542 feet prior to drilling deeper. This wildcat is credited with having had some oil shows.

In Iberville Parish, Humble Oil & Refining Company's Iberville Mortgage Loan Company 1, Section 74-7s-10e, was shut down in shale at 10,025 feet at the close of the week after coring broken sands with shows of oil, gas and salt water. Cores were taken at 9737 to 9747 feet and at 9747 to 9757 feet. The first showed gas with salt water in bottom, and the next showed sands with oil odors.

W. T. Burton has made location for another deep Wilcox test in Vernon Parish. Fee 1 is 1300 feet south of the north line and 435 feet west of the east line of Section 32-1n-6w. It is approxi-

South Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bancroft—		
Republic, Columbia Land & Timer 7,	280	7334
East Baton Rouge—		
Geo. Hells, McGennis 1	*	8192
East Hackberry—		
Bennett Oil Co., Bickford 1	*	8104
Texas Co., State 25-B	*	7445
Eola—		
J. Edward Jones, Haas Investment Co. 1	*	8650
Grand Bay—		
Gulf, Grand Prairie Levee Board 1.	*	8318
Jennings—		
W. T. Burton, Robira 7	550	6912
Woodlawn—		
Union Sulphur, Donovan-O'Conner 1	300	9300
Calcasieu Parish—		
David B. MacDaniels, School Land 1 e of Lake Charles, 16-9s-7w	*	7850
Cameron Parish—		
Superior, State 1, Grand Lake area, 24-13s-4w	384	8400

* Failures; † Junked; ¶ Million cu. ft. gas.

mately 4 miles south of his 7136-foot dry hole, drilled last year.

On the flank of Fausse Point, Iberia Parish, The Texas Company's State Fausse Point 5 was waiting on cement to set after squeezing perforations. The last test made on the wildcat was when casing was perforated with 24 shots from 9602 to 9610 feet and salt water was recovered. The hole has been plugged back to 8624 feet and will make a test at 8610 to 8620 feet.

Shell Oil Company's Hanszen 1, first well for the company at Chalkley field, Cameron Parish, was coring in sand at 9059 feet at the end of the week after making tests up the hole. The first test, made at 8963 to 8975 feet, showed 93 barrels of salt water through quarter-inch chokes. No pressure was shown. The second test, made at 9041 to 9051 feet, recovered three joints of mud with a trace of oil through quarter-inch chokes. The well is already below the regular producing horizon for the field.

Union Sulphur Company again will drill on the South Edgerly prospect, Calcasieu Parish; location was staked for Drew Manuel Training School 2, 990 feet south and 330 feet east of the center of Section 17-10s-11w. It is approximately 2½ miles south and west of the company's first well, abandoned at 8810 feet.

To Test Shallow Sand

Humble Oil & Refining Company will attempt to open a shallow oil sand on the south flank of Roanoke field, Jefferson Davis Parish. DeVillbiss 6 cored two feet of oil sand from 4195 to 4197 feet and 7-inch casing was set at 4237 feet. The regular producing horizon for the field is below 7500 feet.

On the flank of Jefferson Island, Iberia Parish, The Texas Company continued testing Jefferson Island 2 in a new sand. After drilling to 9458 feet in salt topped at 9444 feet, 5¾-inch casing was set at 9078 feet and perforated with 42 shots from 8682 to 8692 feet. The well flowed 110 barrels of 35.6 gravity oil in 12 hours through a 9/64-inch choke with a tubing pressure of 2275 pounds. Later the well flowed only 90 barrels of oil and 227 barrels of salt water through a 5/16-inch choke. Tubing pressure was 750 pounds.

W. T. Burton's L.&N. R.R. 1, Orleans Parish, was losing returns at 8820 feet last week. The well cored a porous lime formation with a show of oil at 9000 feet and 7⅝-inch casing was set at 8820 feet. When plugs were drilled returns were lost. Burton is pumping sawdust into the hole.

At Pine Alley prospect in St. Martin Parish, Roper & Todd's Levert 1 will be drilled to 10,000 feet. Previous contract depth was 9000 feet. The well, now down to 8850 feet in shale, has cored a large sand section which carried a little gas in the top and salt water in the bottom.

Another production test is being made on Vendome Petroleum Company's Kenilworth 1, east of St. Bernard, St. Bernard Parish. Last week casing was perforated with 48 holes from 10,600 to 10,610 feet. The wildcat came in flowing 14 barrels of fluid per hour through a 13/64-inch choke with a tubing pressure of 440 pounds and a casing pressure of 360 pounds. The fluid showed 44 percent oil, 56 percent basic sediment and water, of which 2 percent was salt water. When the fluid was treated it showed 60 percent oil and 40 percent brackish water.

North Louisiana Fields

Extension of Marine zone at Cotton Valley assured. Stanolind will drill deep test at Pine Island.

Shreveport. — Another oil producer from the lower Marine and on the east flank of the Cotton Valley field, Webster Parish, appeared assured last week at Mid-States Oil Corporation's T. K. Giddens 1, C SW SW 30-21n-9w, one-fourth mile east of other lower Marine production.

With an elevation of 188 feet this test topped the "C" sand of the lower Marine series at 8438 feet; topped "D" sand at 8481 feet; and topped the Bodcaw or "E" sand at 8575 feet. In a core from 8576 to 8587 feet, the recovery was 9.5 feet of fine to medium grained gray porous sand with good odor; from 8587 to 8599 feet, there was full recovery, of which 2 feet 9 inches was hard medium to fine grained calcareous sand showing distillate; 1 foot of black shale; and 3.5 feet of medium porous gray calcareous sand with a slight oil odor and no stain; 3 feet of hard grained medium porous calcareous sand, with distillate show; 2 feet very hard limey sand; and 9 inches of slightly porous gray calcareous sand, with show of distillate. Oil saturation was logged from 8616 to 8628, bottom of hole, where casing was set. If a producer of oil, it will be the fourteenth oil well from the lower Marine at Cotton Valley.

Climaxing a leasing campaign that went on for over 2 years and caused securing of approximately 14,000 acres, was the staking of location for Stanolind Oil & Gas Company's proposed deep test in Pine Island field, Caddo Parish. It will be Dillon Heirs 131, C SE NE 14-21n-15w, about ¼ mile from the same company's Dillon Heirs 92, which drilled to 6351 feet more than a decade ago, showed for an estimated 250,000 cubic feet of wet gas in what now is believed to have been the top of the lower Marine. The present test will go at least 6500 feet, and possibly as deep as 8000 feet.

Lack of satisfactory porosity in the lower Marine wells at Shongaloo, Webster Parish, township 23 north, Range 9 west, especially as reflected in the last of the three commercial wells completed there in the lower Marine, the latter the only oil producer, is expected to have a dampening effect at Haynesville, Township 23 north, Range 8 west,

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Cotton Valley—Greggton
Magnolia—Houston

where leasing has been active for several months for a lower Marine test. However, Ohio Oil Company, which will drill the deep test at Haynesville, continues to add to its holdings there.

Another wet gasser for the basal Glen Rose horizon of Lake Bisteneau district, Bienville Parish, was added to Arkansas Fuel Oil Company's (Cities Service' A. B. Shehee 1, C NW SW 13-16n-10w, which showed for 66,550,000 cubic feet of gas daily open flow, rock pressure building up to 2060 pounds in 30 minutes. Casing was perforated from 5090 to 5107 feet with 96 shots and at 5122-36 feet with 99 shots and acidized with 6000 gallons. Previously when casing was perforated from 5155 to 5182 feet, the well had shown for only about 1,000,000 cubic feet. Total depth is 5195 feet.

Arkansas Fuel Oil Company immediately announced two new locations for the same area, one in NW NW 13-16n-10w, and the other in SE SE 15-16n-10w.

In the same parish Producers Oil & Gas Company assigned 160 acres to Hurricane Petroleum Company, 80 acres in Section 19-15n-9w, and 80 acres in Section 13-15n-10w. Phillips Petroleum Company leased 45 acres in SW 28-23n-6w, Colquitt wildcat area, Claiborne Parish, and F. Lee Watson secured 130 acres in the same area.

The Shreveport field added only one new oil well last week and accounted for one new location, as the district continued to show 11 drilling operations.

The new well is W. R. Nicholson Oil Company's Exchange Bank 1, C SW NE 26-18n-14w, in the northeast part of the field. It was completed at 5556 feet flowing 26 barrels of oil per hour through ¾-inch choke. The well was plugged back 5 feet due to having shown salt water, the water level being close to the oil level in some parts of the northeast end of the field.

Red Iron Drilling Company's Model Gardens Unit 1, SW NE SE 23-18n-14w, northeast outpost in the field, which the previous week had shown only 4 feet of saturated basal Glen Rose lime in two sections but later due to appearance in electrical log had encouraged setting of casing, was shut down waiting orders last week at 5580 feet after acidizing and showing some gas and oil. R. E. Allison's Ellerbe 8, NW SE SW 26-18n-14w, after showing salt water was plugged back 5 feet to 5560 feet.

Harry Hanbury's W. P. Leonard 1, C NE NE 19-19n-13w, 4 miles north of Shreveport production, drilled shale and lime at 3495 feet; elevation is 188 feet and base of Annona chalk was logged at 1720 feet; top of Blossom at 2105 feet and the Tokio between 2580 and 2600 feet. This is a 6000-foot basal Glen Rose lime test. Hanbury added 660 acres of state-owned land to his block last week being successful bidder on that amount of acreage in township 19 north, range 14 west, Caddo Parish.

Only one signature remained to be secured last week to the co-operative 8600-foot deep test in the Lisbon field where present production is found in basal Glen Rose lime (Pettet) at 5200-5300 feet. The test will be drilled in or near Section 31-21n-4w, in the center of the present producing field.

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Bienville Parish (Lake Bisteneau)—		
Arkansas La. Gas Co., A. B. Shehee 1, 13-16n-10w	¶66½	5195
Caddo Parish (Pine Island-Vivian)—		
Tippett Oil Co., F. W. M. Browning 1, 28-22n-16w	*	2659
Caddo Parish (Shreveport)—		
W. R. Nicholson Oil Co., Exchange Bank 1, 26-18n-14w	600	5556
La Salle Parish (Wildcat)—		
G. W. Zeigen, La. Cent. Lbr. Co. 16, 24-11n-2e	*	1690

* Failures; † Junked; ¶ Million cu. ft. gas.

Louisiana permits

Shreveport.—Twenty-one drilling permits were issued last week by the Louisiana Conservation Commission of which 9 were in North Louisiana divided among the following parishes: Bossier, 1; Caddo, 4; and Sabine, 4. The 12 in South Louisiana were divided among the following parishes: Beauregard, 2; Cameron, 3; Iberia, 1; St. Mary, 2; St. Tammany, 1; Terrebonne, 2; and Vermilion, 1.

DONALD CAMPBELL became general attorney for Stanolind Oil & Gas Company, Tulsa, May 7, upon retirement of Clay Tallman, who retired under the program set up January 1 by the company. Campbell has been assistant general attorney for the past five years. Tallman came to Tulsa in 1930 as general attorney. He had been with Midwest Refining Company in Denver, another subsidiary of Standard Oil Company of Indiana. He was at one time commissioner of the land office of the Department of the Interior during the administration of Woodrow Wilson.

Arkansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Columbia County (Atlanta)—		
Tide Water-Seaboard, J. A. Price 1, 15-18-19	262	8237
Miller County (Rodessa)—		
Lyons and Merritt, Matlock 2, 2-20-28	240	6225
Union County (Schuler)—		
Phillips, Sewell 10, 7-18-17	250	7700

* Failures; † Junked; ¶ Million cu. ft. gas.

Arkansas Fields

Second Lafayette County test is coring in sand

Second Permian lime well at Atlanta

El Dorado, Ark.—Erwin, Leach and East Texas Refining Company's Bell Estate 1, NW NW 19-16-23, second Glen Rose lime test in the Stamps area, LaFayette County, was at a critical depth last week as it cored for the Hill section of the Glen Rose, at 3457 feet. This test is ½ mile southeast of the same operators' G. E. Patten 1, C S½ NW NE 24-16s-24w, completed as an oil producer at plugged-back depth of 3480 feet. This well on last gauge last week flowed 72½ barrels of 42-gravity oil in 24 hours through ½-inch choke. Bell Estate 1 logged 3 feet of sand showing oil in the upper Glen Rose at 2749-52 feet.

Atlanta's second Permian lime oil well, Tide Water Associated and Seaboard Oil Corporation's J. A. Price 1, C NE SW 15-18s-19w, Columbia County, south offset to the discovery well, gauged 262 feet in 24 hours through 5/32-inch tubing choke with pressure on casing and tubing equalized at 1550 pounds. Total depth is 8237 feet.

Shell Oil Company's Glasgow 1, C SW NW 23-17s-20w, at Magnolia, cored at 7629 feet in Permian lime having cored a total of 195 feet of porosity in the Permian. It was planned to core to base of the porosity to determine its thickness.

Sebersky and associates' Jerry B-1, NE SE SW 21-17-14, Union County, between the old El Dorado East field and the Rainbow City (Champagnolle) field, two miles outside production, was swabbing salt water with oil, after blowing out at 2695 feet and flowing 30-gravity oil for 10 hours before bridging.

New Mexico Fields

Sandy lime belt furnishes most of Lea County work.

Production from nitrogen well at Lovington drops.

Hobbs.—Lea County gained 8 new operations the past week as compared to 10 the previous week, with the sandy-lime belt in the east portion of the county continuing to furnish the bulk of the new work.

Vacuum field has passed its peak level in field activity, although numerous proved locations remain. Magnolia Petroleum Company, owner of the discovery block, is the only operating unit that is attempting to drill inside locations on large tracks. The company currently has 3 rigs running, and will probably keep these engaged indefinitely.

Absence of an adequate market and pipe line outlet has hindered development in Vacuum, which has been accumulating back allowable at an increased rate since the first of the year. The field was short 91,783 barrels of its proration allowable during March, and during the preceding month lacked 78,591 barrels of producing its oil quota for the period. Pending changes in the pipe line situation are expected to enable operators to make up this back alolwable, if a market is available. An undetermined number of wells are not capable of producing their proration quota.

Lea County operators are studying

the possibility of a decreased demand for their production within a few months since a third pipe line is being constructed to deliver crude from the north portion of the Permian Basin sector of West Texas to Hobbs. This oil will share space in the trunk lines that serve Lea County.

Continental Oil Company's State 6-H, C NE NW 35-17s-34e, temporarily concluded the company's drilling program at Vacuum with it completing with a natural flow of 21 barrels of 38-gravity oil per hour through ¾-inch choke from lime at 4495-4680 feet. The only new project was Ohio Oil Company's State-Shugart 2, C NW SE 34-17s-34e.

Schermerhorn Oil Corporation's Woolworth 6, C SW SE 28-24s-37e, an inside location for the Mattix field, gauged 236 barrels oil in three hours through ¾-inch choke on tubing after 370-quart nitro shot at 3450-3550 feet. The company has skidded rig to drill Woolworth 7, C SE SE 28-24s-37e. Continental Oil Company et al's Jack 1-B-29, NE SE SE 29-24s-37e, is a new authorization for the area.

Nitrogen production developed by Repollo Oil Company's State 2-A, east edge of the Lovington pool, mid-April while drilling with rotary at 4108 feet, has levelled off to about 15,000,000 feet daily. The flow was originally rated at 35,000,000 feet. The well has been permitted to blow in expectation of exhausting the output. Magnolia Petroleum Company, which has three tests nearing decisive level in the area, resumed drilling on Selby 1, southeast outpost, after landing 7-inch at 4630 feet.

Texas Pacific Coal & Oil Company's State 15-A, southwest outpost producer for the lime area situated between the Eunice and Penrose fields, deepened with cable tools to 3856 feet without encountering water. The well flowed 7 barrels hourly and will be completed as a natural producer. Continental Oil Company's State 6-J, offsetting the biggest well, flowed 66 barrels of 36-gravity oil hourly natural through ¾-inch choke from lime at 3742-3810 feet. This well flowed 294 barrels per hour on an earlier test through casing with drill pipe in the hole.

Continental Oil Company et al's Lynn 1-A, C SW NE 28-23s-36e, intermediate test for the Cooper and Lynn fields, landed 7-inch at 3570 feet for a production test at 3600 feet. Formation tester used at 3491-3576 feet rated the gas flow at 368,000 feet daily.

New Mexico Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County—		
Hammond & Son, State-Ployhar 1, sw sw se 16-17s-28e	•	1975
Repollo, Parke 5-A, nw ne nw 22-17s-30e	65	3412
Lea County (Eunice)—		
Continental, State 6-J-2, c sw se 2-22s-36e	1584	3810
Repollo, State 1-D-157, nw nw sw 12-22s-36e	659	3785
Lea County (Langlie)—		
Italo Pet. Corp., Carlson 1-B-26, sw ne nw 26-25s-37e	4	3341
Weiner et al, Smith 3, c n½ ne se 4-25s-37e	150	3506
Lea County (Vacuum)—		
Continental, State 6-H-35, c ne nw 35-17s-34e	504	4680
Twin Oil Corp., State 1-D, c sw ne 30-17s-35e	15	4700
McKinley County—		
Dysert et al, U. S. Permit 1, 14-14n-10w	•	1390

• Failures; † Junked; ¶ Million cu. ft. gas.

California Fields

Classification of recent strike puzzles geologists.

Standard completes 7000-barrel well in Greeley.

Los Angeles.—Whether Amerada Petroleum Corporation's 4032-barrel discovery well in northeast Coalinga indicates an extension of the Coalinga Nose or a separate pool divided by a fault seems to be puzzling geologists here. Production from Amerada's well is higher gravity than that of Coalinga Nose wells, and the discovery well produces a great deal of wet gas, while Coalinga Nose wells produce a comparatively small amount, considering their potentials.

While there are no surface indications of a fault and no one has been known to record one as a result of geophysical studies, comparisons have been brought out between the similarity of Amerada's production and Coalinga Nose to that of Ten Section and Canal. At Inglewood production was developed on both sides of a great fault, with one side yielding oil of considerably higher gravity.

Three or four drilling projects are under discussion for this area and an active development program is expected in late summer and fall because of offset requirements. An effort will be made to hold well spacing down to one well per 40 acres.

Amerada Petroleum Corporation has staked location for a second well, S.P.L. 26-17, 1650 feet north and 990 feet east from SWc Section 17-19-16, northeast of the discovery well, S.P.L. 7-17. Bandini Petroleum is grading for No. 48, its first drilling job west of S.P.L. 7-17, and is said to have staked another location. Union Oil Company, The Texas Company and perhaps Bankline Oil Company may drill a joint test also in this area.

In West Montebello Wood-Callahan Oil Company has completed Harris 1 northeast of Lincoln & Montebello boulevards in the eastern part of the new West Montebello extension. The well, bottomed at 7575 feet, flowed at the rate of 1300 barrels per day, 35 gravity oil, cutting 4 percent, with 2,000,000 cubic feet of gas. Perforations are from 7403 to bottom. The company will follow up this producer with two more wells.

Gets Big Well

At Greeley, Kern County, Standard Oil Company brought in a 7000-barrel per day producer when it completed KCL 11-17, in Section 18-29-26, at 11,517 feet. Production, which came from the Vedder zone, was 37 gravity and clean.

Another large producer was completed when Robert S. Lytle brought in No. 31-7F, Section 7-20-16, East Coalinga field, for 3600 barrels per day, 32.6 gravity, cutting 0.1 percent with 700,000 cubic feet of gas. Depth of the well is 7272 feet, with the top of the Gatchell at 6783 feet. Green sand is from 6707-6702 feet, and top of Grit zone 6740 feet. In Section 18-20-16 the company is completing No. 3-18F at 6995 feet in oil sand.

In the Long Beach Harbor-Wilmington area of Los Angeles Basin, Superior Oil Company found only gray sand and shale in the lower part of Seaside Tract 1, Ford Zone test. The well probably will be plugged back from 5551 to 2916 feet, where production was obtained from the Ranger zone.

Cores from 2846 to 2866 feet in the Galveston Oil Company's semi-wildcat No. 1, Section 5-3-19, Shiells Canyon, Ventura County, show an oil sand with production possibilities, according to operators. The hole, on the Barsola property, topped red shale at 2706 feet, with top of first sand placed at 2748 feet. Several more cores will be taken before running a drill stem test or an electrical logging device.

Deep Ones Abandoned

Shell Oil Company's KCL B-87-4, one of the deepest tests drilling in Kern County, has been abandoned at 13,957 feet, believed to be Eocene. Mulinia was placed at 3886 feet, Stevens topped at 8886 feet, Olcese topped at approximately 12,075 feet, with Vedder at 13,375 feet. Showings were encountered in what is described as the lower fraction of Stevens zone from 10,236 to 10,497 feet and at 13,883 feet, but nothing of commercial importance was reported. The hole is located 988 feet

California Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles County (Athens-Rosecrans)—		
Royalty Service Corp., Gordon 3	1000	7835
Los Angeles County (Dominguez)—		
Shell, Reyes 27A	258	4265
Los Angeles County (Montebello)—		
Graham & Loftus Oil Corp., Coffman 1	770	7557
Standard, Braun 3	186	7135
Los Angeles County (Torrance)—		
ABC Oil Co., Angelich 1	150	5200
Los Angeles County (Wilmington)—		
Allied Pet., No. (LB) 32	230	3410
General Pet., Harbor Comm. (LB) 48	278	2980
Hollywood Oil Co., Baxter 6	335	3095
Orange County (Huntington Beach)—		
Southwest Exploration, State 15	212	4940
Orange County (Long Beach Area)—		
Richfield, Richville 1 (w)	•	7492
Kern County (Belridge)—		
Texas Co., Martin 2, ne swc 22-27-20	468	8480
Honolulu Oil, Michelssen 63, n w e¼c 14-28-20 (w)	•	1687
Kern County (Greeley)—		
Standard, KCL 11-16, s e nwc 20-29-26	5000	11,529
Elrich Comm. 1, n e swc 20-29-26 (w)	•	13,538
Kern County (Mt. Poso)—		
Ring Oil Co., Bowles 8, n w s¼c 29-26-28	200	1816
Blackfoot 3, sw n¼c 32-26-28 (w)	•	1903
Kern County (Round Mountain)—		
Grizzly Bear, Kelly 2, ne swc e½ ne¼ sw¼ 6-28-20	30	1705
Kern County (Ten Section)—		
Shell, KCL B-2-28, se nwc 28-30-26	3580	8220
Ventura County (Ventura Avenue)—		
Shell, Taylor 98, sw C.L. No. 11	2240	8230
Tide Water, Lloyd 77	302	9865

• Failures; † Junked; ¶ Million cu. ft. gas.

north and 330 feet west from SEc Section 4-30-25, in the Canal field.

Another deep hole that has been abandoned is Standard Oil Company's Elrich Community 1, Section 20-29-27, Greeley field, bottomed at 13,538 feet.

Union Oil Company's Nieto 1, wildcat located southeast of the Seal Beach field in Section 12-5-12, was abandoned at 7101 feet when an electrical logging device found it to be approximately 1490 feet lower structurally than the proven area at Seal Beach. No showings of commercial importance were encountered.

Yuma Gas & Oil Company is bringing in oil drilling machinery and equipment to put down a well on the Sebe Musgrove property in the lower Yuma Valley. This project will be its first on leases embracing 1015 acres.

The vicinity of Stoval and Texas Hill, east of Mohawk, where all available land has been purchased or leased for oil development, is also expected to be the scene for drilling operations in the near future.

Indian lease sale

Muskogee.—Forty-five tracts will be offered at public auction by the Five Civilized Tribes on May 16. These tracts are divided into 12 counties as follows: Creek County, 11; Seminole, 9; Bryan, 8; Marshall, 5; Okmulgee, 4; Pawhuska, 2, and Craig, Okfuskee, Hughes, Latimer, Pontotoc and Johnston 1 each.

Rocky Mountain Fields

Deep Sundance test at Cole Creek is disappointing. North Cut Bank gasser yields 43,000 cubic feet.

Casper, Wyo.—Disappointing results were obtained in the Sundance sands of the Cole Creek field at the discovery location, where the General Petroleum Corporation's Government 1, NW NW SE 21-35n-77w, drilled to 8511 feet in the lower Jurassic beds without encountering commercial oil shows. The company has cemented back inside the 6-inch casing, cemented at 7974 feet, and will gun-perforate to test horizons above the Sundance. The well originally was completed for 250 barrels daily in the Lakota at 7974-8013 feet in June, 1938.

A record gasser was completed this week in North Cut Bank, Glacier County, northern Montana, when Newell & Chandler's Hintraeger 1, C NE NW 24-37n-5w, gauged 43,000,000 cubic feet of wet gas daily from the Moulton sand at 2590-96 feet. Some oil saturation was also reported in the sand. This is the first well in the field to be drilled with rotary tools and adds a considerable area to the recently proven Darling pool on the north side of the main field. It checks considerably lower than other wells on this pool, but is still above the Kotops well drilled on the Canadian side of the field which showed for 8 barrels per day from the Moulton sand.

Lance Creek field, Niobrara County, continues as Wyoming's most active producing area. The field recently topped Salt Creek in daily average production for the first time this year, and bids fair to move into first place regularly for the largest producing field in the state. Daily average production for the Niobrara County field reached 15,280 barrels per day during the week ending April 29, during which time Salt Creek, top ranking producing field for the state for 20 years, produced an average of 14,960 barrels.

Mountain States Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
Glacier County (Cut Bank)—		
Glacier Prod. Co., Miller 3 c ne ne 33-28n-5w	294	3078
McDougall 2, c sw nw 31-34n-5w.	80	2869
Callison 1, c sl n 27-34n-5w.....	¶½	2618
WYOMING		
Weston County (Osage)—		
Wheedon et al's 1, c sw ne 21-46n-64w	*	3953

* Failures; † Junked; ¶ Million cu. ft. gas.

SPARTA-WILCOX TREND MAP

Area covered by map: South Arkansas, Mississippi, Louisiana, and extends West to Lavaca County in Texas.

Shows: Oil fields in green, gas fields in red, with index giving official name of each field and location on map.

Counties, cities, towns, county seats and townships, major structural features, as Sabine Uplift, Monroe Uplift, Angelina-Caldwell Flexure, Mobile Tunica Flexure, correlation chart and approximate boundaries of Sparta-Wilcox Trend as recently revised by Roper & Todd, Geologists, Houston.

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Michigan Fields

Many permits indicate heavy summer drilling

Mount Pleasant, Mich.—Forty-three permits issued this week by the Conservation Department established a 2-year record and appeared to signal a "go" sign for a heavy summer drilling campaign in Michigan. All but 5 of the permits were for locations in southwestern Michigan and for shallow producing zone areas.

Grandville Extended

Ide & Glavin Development Company gave the Grandville field, Kent County, current hot spot in Michigan, an important mile east extension with the Renihan 2, NW SW SE, Section 33-7n-12w, initialing 180 barrels natural at 1781 feet in Traverse and stepping up to 460 per day with acid treatment. Five other completions were scored in the Grandville field with potentials up to 1000 barrels per day, but none of the others offered new territory.

Sun Oil Company staked a location in Paris Township, Kent County, for the first move of a major company in the play. It likewise marked Sun's first trip into the Southwestern Michigan shallow play. Socony Vacuum Oil Company is the only major with shallow pool production; Gulf Refining Company the only other major which has carried on active wildcat drilling.

Two deep tests in the basin were abandoned during the week, both failures in the Dundee limestone. Gulf Refining Company abandoned Stilwell 1, Section 20, Colfax Township, 15n-9w, Mecosta County, at 3675 feet. Dundee top was checked at 3526 feet with a gas show at 3529 feet. Sun Oil Company abandoned the Adams 1, Section 16-16n-1e, Midland County, at 3788 feet, 114 feet in the Dundee.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
Brailey Oil Synd., Jipping 1, sw sw se 3-3n-14w	*	1475
Bell-Marks, Inc., Hendrixson 1, c e ne 23-3n-12w	*	1844
Koebel et al, Busscher 2, sw nw ne 27-4n-14w	160	1470
Socony Vacuum, Weber 3, ne ne nw 11-4n-13w	240	1593
Re-Man Oil Co., Fee 1, nw ne ne 22-4n-13w	478	1581
Black Rock, Klpen 1, nw ne nw 23-4n-13w	*	1598
Tamblyn Dev. Co., McLaughlin 1, se ne ne 26-2n-12w	*	1600
Arenac County—		
Weber Oil Co., Berrg G1, se se sw 4-20n-4e	¶2	1110
Clare County—		
Pure Oil Co., Switzer 4, c s se sw 27-19n-6w	1100	3908
Bicknell A2, c n nw ne 34-19n-6w	1780	3880
Van Horn 1, c n nw nw 34-19n-6w	1080	3909
Kalamazoo County—		
Premier Oil Co., Munson 1, ne ne ne 9-2s-12w	*	1623
Kent County—		
Smith Pet. Co., Livingstone 1, sw se se 32-7n-12w	600	1764
Ide & Glavins, Reinihan 2, nw sw se 33-7n-12w	470	1781
A. S. Cochran, Chapin 1, ne sw 8-6n-12w	*	1837
Mecosta County—		
Gulf, Stilwell 1, ne sw ne 20-15n-9w	†	3675
Midland County—		
Sun Oil Co., Adams 1, se nw 16-16n-1e	*	3902
Montcalm County—		
E. C. Dailey, Eggleston 1, c ne 22-11n-5w	*	1128
Taggart Bros., Waldo 9, c sw 16-12n-9w	*	1140
Van Buren County—		
Bridger Basin, Meek 4, ne sw ne 17-1s-14w	100	1212
H. Brown Cannon, Brown 2, ne se nw 24-1s-14w	*	1354
Brown 3, se ne nw 24-1s-14w	*	1360
C. C. Goff, Miller 4, nw sw ne 24-1s-14w	70	1348
W. H. Thouriby, Smith 1, nw sw ne 24-1s-14w	*	1359
Rex Oil Co., Foster 2, ne sw ne 11-1s-15w	815	1158
Sprenger Bros., Love 1, nw nw sw 11-1s-15w	*	1180
Clapsaddle et al, Locker 2, sw se sw 13-1s-15w	350	1173
Been 3, nw ne nw 24-1s-15w	390	1169
Daily Crude Oil, Potter 1, se ne ne 13-1s-15w	55	1121
T. K. Buzard, Frazer 1, nw ne se 23-1s-15w	*	1280

* Failures; † Junked; ¶ Million cu. ft. gas.

Shale-oil benefiting from England's policy

The Scottish shale-oil industry is benefiting from the British government's guarantee of preference on home-produced oils for 12 years, and this benefit is reflected in the developments which are taking place in the shale field in West Lothian. A new shale mine has been opened near West Calder by Scottish Oils, Limited, and similar developments are taking place at Broxburn and Winchburgh.

The company has decided to erect new oil works near West Calder, and when completed a light railway will be laid for transportation of the shale to the retorting plant.

Reliability

Economy

Strength

Safety

—characteristics of every Kennedy Valve

Send for the Kennedy Catalog

KENNEDY Valves are *reliable* because of their simple, sturdy and effective operating mechanisms. They are *economical* because of their durability which assures long service with minimum maintenance expense. Their generous proportions of all parts assures ample *strength* and complete *safety*. The Kennedy line includes a specially designed and exactly suitable type for every oil and gas industry service.

The Kennedy Valve Mfg. Co.
Elmira, N. Y.

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

WILDCAT REPORT
New Starts and Completions

STATE	WILDCATS STARTED		WILDCAT TESTS COMPLETED							
			Total		Oil		Gas		Dry	
	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year
Alabama	...	3	...	1	...	...	...	...	...	1
Arkansas	...	11	...	6	...	...	...	...	...	6
California	7	101	2	50	...	15	...	1	2	34
Colorado	...	...	...	3	...	...	...	...	...	3
Georgia	...	2	...	...	...	...	...	...	...	...
Illinois	6	172	10	118	...	9	...	...	10	109
Indiana	...	10	...	9	...	3	...	1	...	5
Kansas	6	68	4	70	1	25	...	1	3	44
Kentucky	...	5	1	10	1	5	...	...	...	5
Louisiana	2	51	3	31	...	6	...	...	3	25
North Louisiana	1	19	1	10	...	3	...	...	1	7
South Louisiana	1	32	2	21	...	3	...	...	2	18
Michigan	7	72	5	103	...	7	...	...	5	96
Mississippi	...	3	...	...	...	...	...	...	...	...
Missouri	...	1	...	...	...	...	...	...	...	...
Montana	...	1	...	...	...	...	...	...	...	...
New Mexico	3	18	...	5	...	...	...	1	...	4
New York	...	...	...	2	...	...	...	1	...	1
Oklahoma	2	70	8	64	1	8	1	3	6	55
Ohio	...	2	...	6	...	1	...	...	...	5
Pennsylvania	...	1	...	2	...	...	...	...	...	2
South Dakota	...	1	...	...	...	...	...	...	...	...
Texas	20	366	27	387	1	38	...	3	26	346
East Texas	4	46	2	34	...	1	...	...	2	33
North Texas	3	52	4	88	...	18	...	1	4	69
Gulf Coast	2	40	1	28	...	2	...	...	1	26
Panhandle	...	2	...	4	...	...	...	...	...	4
South Texas	7	146	14	170	...	11	...	1	14	158
West Texas	4	80	6	63	1	6	...	1	5	56
West Virginia	1	1	...	...	...	...	...	...	...	...
Wyoming	...	1	...	...	...	...	...	...	...	...
Total U. S.	54	965	60	869	4	120	1	12	55	737

CALIFORNIA

FIRST REPORTS

Los Angeles County—Vanguard Oil Co.'s L.A.I. 1, 232 ft s 1184 ft e nwc 29-2-14, Inglewood area, foundation.

Orange County—Dana Point Oil Assoc.'s No. 1, c 15-3-8, Dana Point area, rig.

Kern County—Union's Kernco 2-11, 1650 ft n 330 ft e of C/Ls 11-31-25, Cole's Levee area, foundation. Francis O'Reilly's Douglas 1, 150 ft n 150 ft w s¼ c sw¼ 32-29-29, Edison area, rig. Shell's Union 76-31, 1649 ft n 991 ft w sec of 31-11-22, San Emigdio area, dr 671 ft.

Fresno County—Texas Co.'s Loeschner 1, 990 ft s 2310 ft e nwc 12-17-16, Cantua Creek area, rig. Superior's P.V. 1, 330 ft n 330 ft w s¼ c 22-20-15, Coalinga area, foundation.

COMPLETIONS

Orange County—Richfield's Richville 1, 200 ft n 200 ft e Roosevelt Rd. and Sherry Ave., Long Beach area, abnd 7492 ft.

Kern County—Honolulu Oil Co.'s Michelssen 63, 993 ft n 990 ft w e¼ c 14-28-20, Belridge area, so oil, abnd 1687 ft.

ILLINOIS

FIRST REPORTS

Clark County—Leatherman's Cooley 1, c se sw 26-9n-14w, moving in materials.

Clinton County—James H. Morcom's Rohr 1, nw ne 9-2n-3w, Wade tnp, moving in materials for a Niagaran lime test.

Edgar County—B. & B. Oil Co.'s Weaver J. Baum 1, nw sec 12, 4 mi ne of Newman, moving in rotary.

Jasper County—Shell Oil Co. and Frank Brown's Tracey O. Crouse 1, c sw se 30-6n-9e, Smallwood tnp, set surface pipe.

Washington County—G. E. Morris et al's Henry Piper, Sr. 1, sec 29-1s-5w, Venedy tnp, sp.

Wayne County—Robinson and Puckett's Leech 1, sw nw 14-2s-8e, 3 mi se of Fairfield, dk.

COMPLETIONS

Clark County—Kingwood Oil Co.'s Jacob Miller 1, se ne ne 36-7n-12w, top Devonian 2425 ft, abnd 2573 ft.

Gallatin County—Dillon et al's C. Frohock 1, se se se 4-10s-8e, Eagle Creek tnp, top Fredonia 2585 ft, abnd 2750 ft. Bailey & Lucas' Dr. H. Logan 1, se ne ne 21-8s-8e, North Fork tnp, top St. Louis 2942 ft, abnd 2980 ft.

Perry County—Lundy & Winkler's Stern 1, nw nw ne 8-4s-3w, Beaucoup tnp, top St. Louis 1575 ft, abnd 1630 ft.

St. Clair County—A. H. Emenhiser's A. Alberts 1, c n nw sw 31-1n-8w, St. Clair tnp, abnd 1615 ft.

Sangamon County—A. C. Leathers et al's Workman 1, nw se se 28-15n-16w, top Trenton 1866 ft, abnd 1903 ft.

Shelby County—Harris et al's Skinner 1, nw nw nw 29-10n-1e, Oconee tnp, top Bethel 1540 ft, abnd 1702 ft. Hughes et al's Fluga 1, nw ne nw 34-10n-5e, top St. Louis 2180 ft, abnd 2212 ft.

Washington County—Bill Morgan et al's Dawkins 1, se sw 15-3s-3w, top Benoist 1659 ft, top Aux Vases 1685 ft, abnd below McClosky at 1850 ft.

Wayne County—H. H. Weinert, Inc.'s L. Cunningham 2, c s se se, Barn Hill tnp, top Fredonia 3355 ft, abnd 3450 ft.

KANSAS

FIRST REPORTS

Barton County—Vernon Oil & Gas Company et al's Hoffman 1, nwc sw 18-16-11w, pits.

Butler County—Carey et al's Kelley 1, c sw 20-27-4e, sd 265 ft.

Cowley County—Hartman et al's Brown 1-A, sec nw 33-30-4e, pits.

Rice County—Jones' Habiger 1 nec sw 9-18-10w, lcn. Phillips Petroleum Co.'s Brandenstein 1, c se nw 35-19-10w, dr 1490 ft. Gulf Oil Corp.'s Linke 1, cel ne se 36-19-10w, dr 1985 ft.

COMPLETIONS

Barton County—I. W. Murfin et al's Birzer 1, nec sw 21-19-11w, 1 mi w Laterman pool, top Topeka 2680 ft, top Lansing 3060 ft, top Conglomerate 3363 ft, top Arbuckle lime 3379 ft, hfw 3405 ft, some oil, abnd.

Rice County—Phillips Petroleum Co.'s Newbold 1, sec ne 2-19-9w, 4 mi e Haferman pool, top Topeka 2495 ft, top Lansing lime 2939 ft, top Conglomerate 3281 ft, top Kinderhook 3296 ft, top Sylvan dolomite 3306 ft, top Viola lime 3328 ft, top Simpson 3375 ft, top Arbuckle lime 3428 ft, no shows, abnd. Gulf Oil Corp.'s Barngrover 1, cwl sw sw 30-19-9w, 1 mi w Chase pool, top Lansing 2943 ft, top Conglomerate 3255 ft, top Arbuckle lime 3269 ft, acidized with 2000 gals, td 3284 ft, 1322 bbls, completed.

Stafford County—Lauch et al's Connaughley 1, swc 18-24-13w, 1¼ mi se Rattlesnake pool, top Topeka 3160 ft, top Lansing 3590 ft, top Viola 4019 ft, top Arbuckle lime 4211 ft, td 4233 ft, no shows in Arbuckle, sso in Lansing, pb 3902 ft, abnd.

KENTUCKY

COMPLETIONS

Daviess County—J. C. Preston's C. H. Abel 1, 6 mi e of Owensboro, topped McClosky 1417 ft, pumped 100 bbls in 12 hours without acid treatment, td 1422 ft.

NORTH LOUISIANA

FIRST REPORTS

Caddo Parish—Stanolind's Dillon 131, c se ne 14-21n-15w, moving in materials (deep test for old shallow Pine Island field).

COMPLETIONS

La Salle Parish—G. W. Zeigen, La. Cent. Lbr. Co. 16, nec se sw 24-11n-2e, elev 185 ft, top Wilcox 1620 ft, abnd 1690 ft.

SOUTH LOUISIANA

FIRST REPORTS

St. Tammany Parish—Honey Island Dev. Co.'s Forbes 1, Honey Island area, 1610 ft e of w line and 2230 ft s of n line of Section 33-7s-15e, 100 ft woc.

COMPLETIONS

St. Mary Parish—Phillips' Whitney Nat'l Bank 1, Patterson area, 467 ft ne of sw property line and 467 ft se of nw property line in sec 13-15s-12e, abnd 11,710 ft.

St. Martin Parish—Magnolia's Francois 1, St. Martinville area, 8-10s-7e, abnd 10,002 ft.

MICHIGAN

FIRST REPORTS

Allegan County—Slusser & Kurtzs' Rozema 1, ne sw ne 2-4n-12w, dr. Arthur Morris' Pipe 1, ne ne ne 12-1n-15w, rig. Robert Bond's Buck 1, nw sw nw 9-3n-11w, dr.

Berrien County—Sprenger Bros.' Herwig 1, sw 10-4s-18w, dr.

Kent County—J. V. Wicklund Dev.'s Davis 1, sw sw sw 10-9n-11w, lcn.

Ottawa County—Century Oil Co.'s Miller 1, ne ne se 14-7n-14w, dr. R. C. Lentz's Brouwer 1, nw sw nw 24-5n-14w, dr.

Van Buren County—Slagel et al's Wacker 1, n n nw 24-2s-17w, rig. Coloma Development Co.'s Sanders 1, se sw sw 28-2s-17w, dr.

COMPLETIONS

Allegan County—Brailey Oil Synd.'s Jipping 1, sw sw se 3-3n-14w, abnd 1475 ft in Traverse. Tamblyn Dev. Co.'s McLaughlin 1, se ne ne 26-2n-12w, abnd in Traverse, 1600 ft.

Kalamazoo County—Premier Oil Co.'s Munson 1, ne ne ne 9-2s-12w, abnd 1623 ft.

Mecosta County—Gulf's Stilwell 1, ne sw ne 20-15n-9w, Dundee 3526 ft, sg 3530 ft, abnd 3675 ft.

Midland County—Sun's Adams 1, c w se nw 16-16n-1e, Dundee 3788 ft, abnd 3902 ft.

NEW MEXICO

FIRST REPORTS

Chaves County—R. M. Baker et al's Baker 1, nw nw nw 19-10s-30e, lcn.

Mora County—El Paso Natural Gas Co.'s fee 1, ne ne ne 14-19n-21e, dr 1650 ft.

San Miguel County—Ben E. Keith et al's McCune 1, sw se sw 32-16n-12e, cem sur pipe.

OKLAHOMA

FIRST REPORTS

Pottawatomie County—Berky's Dowell 1, sw ne nw 33-8n-4e, dr.

Seminole County—Flynn et al's Work 1, ne se se 19-8n-7e, lcn.

COMPLETIONS

Comanche County—Richards et al's Anderson 1, ne nw se 30-4n-11w, 6 mi w Elgin, abnd 952 ft.

Creek County—Burke-Greis et al's Vanderslice 1, nec se 30-14n-7e, 3 mi s Stroud pool, top Prue 2841 ft, shot 40 qts 2850-70 ft, td 2884 ft, 4,000,000 cubic feet gas, completed.

Garfield County—Hughes Drilling Co.'s Meisner 1, c ne nw 10-20n-4w, new horizon Brown pool, top first Wilcox sand 5823 ft, top Marshall zone 5865 ft, top second Wilcox sand 5914 ft, td 5944 ft, 105 bbls, completed.

Kay County—Cooper Drilling Co.'s Caughlin 1, se ne sw 30-25n-1e, 1 mi e Tonkawa pool, top Layton 3273 ft, top Cleveland 3625 ft, top Mississippi lime 4310 ft, abnd 4502 ft.

Kiowa County—Wichita Oil Inc.'s Mace 1, swc 11-5n-15w, 4 mi s Sedan, top sand 100 ft, td 133 ft, ⅛ bbl, gr 34.7, completed.

Muskogee County—Heydrick's Paschall 1, ne se nw 22-14n-19e, 4 mi e Keefeton, top Wilcox sand 1463 ft, 100,000 cubic ft gas, abnd 1468 ft.

Okmulgee County—Wise Drilling Co.'s Morrow 1, sw nw ne 16-15n-13e, Natura District, top Dutcher 1919 ft, top Misener 2205 ft, top Viola 2466 ft, top Dense 2488 ft, top Wilcox sand 2494 ft, top Turkey Mt. 2638 ft, sso and ssw, abnd 2657 ft.

Pontotoc County—Union Development Co.'s Abbott 1A, sw nw ne 34-3n-6e, 6 mi se Ada, abnd 4100 ft.

Pottawatomie County—Dickson Oil Co.'s LaReau 1, nec sw 33-6n-3e, 2 mi e Wanette, top Belle City 2400 ft, top Hogshooter 2743 ft, top Woodford 3590 ft, top Hunton lime 3600 ft, 2 million cubic ft gas, no oil show, abnd 3615 ft.

EAST TEXAS

FIRST REPORTS

Falls County—Jack Shaunfield et al's Bargainer 1, 2000 ft fr n and 1500 ft fr e lines of J. M. Graham sur, se of Chilton, dr 415 ft.

Kaufman County—Valentine & Ed. DeArman's C. E. Bauman 1, 4500 ft fr se and 5500 ft fr ne lines of D. Falcon sur, 1½ mi s Kaufman, on 192.88-ac lease, rur.

Navarro County—Topaz Oil Co.'s E. Trammel 1, 950 ft fr nw and 9660 ft fr sw lines of R. Matthews sur, or 950 ft fr n and 330 ft fr sw lines of sw 40 acres of 160-ac tr, 4 mi ne Bazette, lcn.

Trinity County—W. C. Shirley et al's Southern Pine Lumber Co. 1, 600 ft fr s and 150 ft fr e lines of J. A. Sepulveda sur, 5 mi nw Apple Springs, dr 710 ft.

COMPLETIONS

Limestone County—W. H. Gant et al's Vol de Long 1, 330 ft se along se line of 100-ac tr fr nec of same and 330 ft ne at right angles on 220-ac tract, Pedro Varella sur, 1½ mi nw Thelma, elev 531 ft, Austin chalk 2246-2380 ft, top Woodbine 2764 ft, abnd 2975½ ft.

McLennan County—J. E. Thompson et al's F. E. Goodman 1, C. O'Campo sur, 4 mi s Waco, top Austin chalk 243 ft, top Georgetown 725 ft, abnd 815 ft.

NORTH TEXAS

FIRST REPORTS

Archer County—Bridwell Oil Co.'s J. S. Bridwell 1, 2625 ft fr e and 2283 ft fr s lines of J. Collingsworth sur, A-68, testing sand 909 ft.

Clay County—L. T. Burns et al's E. F. Calloway 1, 1500 ft fr s and 330 ft fr w lines lot 9, Hopkins C. S. L. sur, A-176, 1 mi sw Blue Grove, mim for 5000-ft test. L. S. Youngblood-R. L. Foree & Ramsey Pet. Corp.'s R. F. Wynn 1, 330 ft out of sec nw¼ sec 2, G. Gowan sur, A-795, 6 mi w by n of Bellevue, lcn for 5000-ft Strawn test.

COMPLETIONS

Cooke County—Cliff Camp Drl. Co. (was Means & Howard's) W. T. Lynch 1, 1075 ft out of nec of tract, A. Edminston sur A-353, abnd 4909 ft.

Jack County—Sneed & Senter's G. L. Jones 1, 900 ft fr n and 600 ft fr w lines of 90-ac tract I. Hughson sur A-256, nw edge Bryson, abnd 2700 ft.

Montague County—Staley Oil Co. et al's E. D. Nunley 1, 330 ft fr e and 274 ft fr s lines of 35-ac lease, or 7500 ft n and 8050 ft w of sec of N. S. Ussery sur, A-824, 2 mi sw Montague, top Canyon 1780 ft, abnd 5810 ft.

Wilbarger County—Davis Oil Corp.'s J. A. Farley 1, 1170 ft out of nec of H&TC sec 81, blk 14, abnd 1501 ft.

WEST CENTRAL TEXAS

COMPLETIONS

Brown County—Curtis Norman et al's Stella Rice 1, nw¼ blk 2, sec 127, Chas. Messer sur, used 3000 gals acid in lime pay 962-997 ft, pumped 8 bbls oil initial.

Eastland County—Michigan-Ranger Oil Co.'s Brashear 2-A, 930 ft fr n and 6700 ft fr w lines Wm. Van Norman sur, top Ellenberger 3635 ft, saturated lime 3765-75 ft, td 3784 ft, used 1000 gals acid and tested 3 bbls oil and 2 bbls water, shot 120 qts nitro 3765-75 ft, increased water, abnd.

WEST TEXAS

FIRST REPORTS

Crockett County—J. Silas Pittman et al's Mrs. W. C. Corbett-Humble 1, se se nw GC&SF sec 15, blk B-2, lcn.

Pecos County—E. Russell Lloyd et al's H. F. Bonebrake-Honolulu 1, 330 ft fr ne and 2310 ft fr nw lines H&GN sec 110, blk 8, lcn. Magnolia Petroleum Co.'s H. J. Eaton-Abell 2, 493 ft out of e corn H&TC sec 23, blk 3, or 75 ft w 2076-ft failure, rur for 6000-ft test.

Taylor County—D. H. Bolin et al's Mabel Neill 1, 330 ft out of nec lse, T&P sec 31, blk 17, cem sur pipe.

COMPLETIONS

Lynn County—John L. Baldridge et al's Alamo Lumber Co. 1, ne sw sw HE&WT Ry. sec 151, elev 3267 ft, top anhydrite 2130 ft, top Yates 2900 ft, top San Andreas lime 4170 ft, jkd and abnd 4450 ft.

Pecos County—Geo. T. Abell et al's F. A. Knapp 1, 330 ft out of nec of 100-ac tr, lot 6, H&GN sec 22, blk 9, elev 2389 ft, top anhydrite 220 ft, salt series 495-1165 ft, abnd in sul w 2495-2503 ft. E. M. Thomasson Producing Co.'s J. A. Nations 1, 2970 ft fr s and 4950 ft fr w lines sec 1, blk 105, W. P. Howard sur, elev 2686 ft, abnd 2803 ft. Magnolia Pet. Co.'s H. J. Eaton-Abell 1, 440 ft fr ne and se lines or e corner H&TC sec 23, blk 3, elev 2424 ft, abnd 2076 ft.

SOUTH TEXAS

FIRST REPORTS

Duval County—William M. Nicholls' Graham 1, 330 ft ne; thence 330 ft nw at rt/ang from n'ly n corner of 40-ac V. Garcia tr and in Cuadrillo Irrigation sur 572, lcn.

Jim Hogg County—W. M. Howard et al's Hellen 1, 330 ft n line, 330 ft e line of blk 13, sur 21, moving in.

Webb County—Navarro Oil Co.'s Benavides 2, 334 ft sw line, 1053 ft nw line of blk 11, section 1 Josefa Cuellar Gr (Callaghan tr between Arispe and Cuellar Grants), lcn. Superior Oil Co. of California's Walker 1, center of Lot 4, Ed. Claggett subd, sec 259, CCSD and RGNG sur, coring below 1756 ft.

Guadalupe County—H. H. Coffield's Wells 1, 150 ft n line, 150 ft e line of 50-acre lse, C. C. Currier sur, shut down below 2880 ft.

Travis County—H. J. Strief's Walker 1, 810 ft nw line, 150 ft sw line of 34-ac tr, James Gilleland sur, lcn.

Williamson County—Burns Oil Co.'s Smith 1, 1750 ft s line, 1400 ft e line of 830.8 ac tr, Jefferson west sur, lcn.

COMPLETIONS

Bee County—Humble's Fox 1, 1399 ft w line, 7179 ft n line 3245 ac tr, M. Fox sur, abnd 5512 ft.

Brooks County—Superior of Oklahoma's Mestina 1, begin nw corner sh 11, thence 3422 ft e along n line, thence s 1853 ft to lcn, in LaMestina Grant, abnd 5538 ft.

Karnes County—Herbert Aid's Kaiser 1, 330 ft sw line, 990 ft se line J. Poitevent sur, abnd 2500 ft.

Nueces County—Killam's Smith 1, 330 ft s and e lines sec 30, Laureles Farm tracts, drill stem stuck, abnd 7512 ft.

San Patricio County—Morgan et al's Smith 1, 1187 ft w line, 244 ft s line of s 40 ac of blk 2, Welder subdivision, Pollan sur, abnd 7021 ft.

Duval County—Glasscock's N. Garcia 1, 300 ft e line and 3700 ft s line 389 ac sh 11, Concepcion Grant, abnd 6517 ft. Howell & Cunningham's Parr 1, 330 ft s and w lines blk 83, Parr ranch, San Andres Grant, abnd 6542 ft. Republic Production Co.'s Society for Propagation of the Faith 2, 990 ft nw line and 330 ft ne line of sur 549, abnd 4113 ft. Texas Gulf's Dunn 1, 3056 ft w line, 467 ft s line sec 378, abnd 6022 ft.

Jim Hogg County—Neal & Shaw's Armstrong 1, 364 ft n line and 330 ft e line of H & W sur No. 89, abnd 4006 ft.

Medina County—Carle's Bendele 1, 900 ft westerly w line, 1059 ft northerly w line 321 ac tr, J. Barnhart sur, abnd 1207 ft.

Travis County—Fields and Paine's Carlson 1, 526 ft n line and 2112 ft w line of 158 ac tr, abnd 1230 ft. Wolters and Wolters' Johnson 1, 164 ft w line, 1436 ft n line 120 ac tr, Hann sur, abnd 978 ft in Serpentine.

Williamson County—Burns Oil Co.'s Hanson 1, 1358 ft w line, 1299 ft s line, William Byerly sur, abnd 1550 ft.

TEXAS GULF COAST

FIRST REPORTS

Liberty County — Stanolind's Flowers 1, Martha area, 466 ft n of s line and 1410 ft w of e line of 110-acre tract, I. & G. N. No. 7, lcn.

Matagorda County—Continental's Savage 1, Collegport area, 1050 ft n and 2300 ft w of sec of D. Yeamans sur, lcn.

COMPLETIONS

Matagorda County—Pierce Estate's Fee 1, Podo area, 5100 ft fr ne line and 2750 ft fr se line of lease in B. Rawls & Stout sur, abnd 8214 ft.

WEST VIRGINIA

FIRST REPORTS

Jackson County—Joe Rubin et al's Carson 1, Ravenswood District, to test Oriskany, rig up.

John Purdum enters field of engineering service

After 22 years of practical field experience filling positions from roughneck to production and research engineer, John F. Purdum, for the past two years manager of the machinery department of Muskogee Iron Works, has announced the establishment of a consulting engineering service in Tulsa. Purdum will specialize in drilling and production methods and in the design and installation of equipment.

Born in Macomb, Illinois, Purdum spent seven years in the fields of Wyoming, Kansas, Texas, Oklahoma and Poland, working as a roustabout, pumper, tool dresser, driller and tool pusher. He then entered the Colorado School of Mines in 1925, graduating in 1930 to become research engineer for Oil Well Supply Company. In 1932 he became chief engineer for American Manufacturing Company of Texas, later joining Stanolind Oil & Gas Company, in charge of their equipment engineering department. He joined the M. I. W. organization in 1937. He has opened offices in the Thompson Building in Tulsa.

Depletion deduction suit to be heard by high court

Methods of applying the depletion provisions of the Revenue Act of 1926 will be studied early next fall by the United States Supreme Court, which on May 1 granted a petition of F. H. E. Oil Company for review of the Fifth Circuit Court of Appeals decision upholding methods applied by the Commissioner of Internal Revenue.

The company is a Texas Corporation with an interest in a number of wells. For a taxable year, the commissioner allowed as depletion 27½ percent of the gross income from each well of 50 percent of the net income, whichever was lower, and in determining the amount of net income, he included in the items to be deducted from gross income the amount of intangible drilling and development expenses deducted by the company as expense on its return.

The company contested the commissioner's action before the Board of Tax Appeals, which overruled him and held that for the purpose of computing depletion, net income and operating profit are synonymous and that development costs deducted as expense should not be included in computing net income.

On appeal by the commissioner, the Circuit Court of Appeals reversed the board and held that the revenue laws adopted prior to the 1926 act showed conclusively that if costs of development were deducted as expense, they could not thereafter be added to increase the basis for depletion, and that there was nothing in subsequent statutes tending to show that Congress intended to apply a different principle when depletion is deducted annually and determined by the percentage method.

In appealing to the Supreme Court, the oil company contended that the lower court erred in holding that the commissioner was right in deducting the intangible costs of drilling in determining net income for the purpose of applying the 50 percent limitation.

Second of three navy sponsored tankers launched

The second of three fast national defense featured tankers, which the Federal Shipbuilding and Dry Dock Company, United States Steel subsidiary, is building for Standard Oil Company of New Jersey, was launched at Kearny, New Jersey, April 29.

Christened "Neosho" by Mrs. Emory Land, wife of Rear Admiral Land, chairman of the United States Maritime Commission, the ship is one of three high-speed tankers being built by this company, and upon its completion and delivery, it is to be turned over to the United States Navy Department.

The "Neosho" has an over-all length of 553 feet, a dead weight capacity of over 18,000 tons at summer freeboard draft, an oil carrying capacity of over 6,000,000 gallons, and a radius of action of about 12,000 miles. One of the fastest tankers of its type, the vessel is capable of service speeds in excess of 18 knots at sea.

J. A. WEEKS, E. P. Schneider and O. F. Walker last week incorporated Marion Pipe Line Company as an Illinois firm. Headquarters are at 301 Pruyn Street, Salem.

NOTES FOR THE Equipment Buyer and User

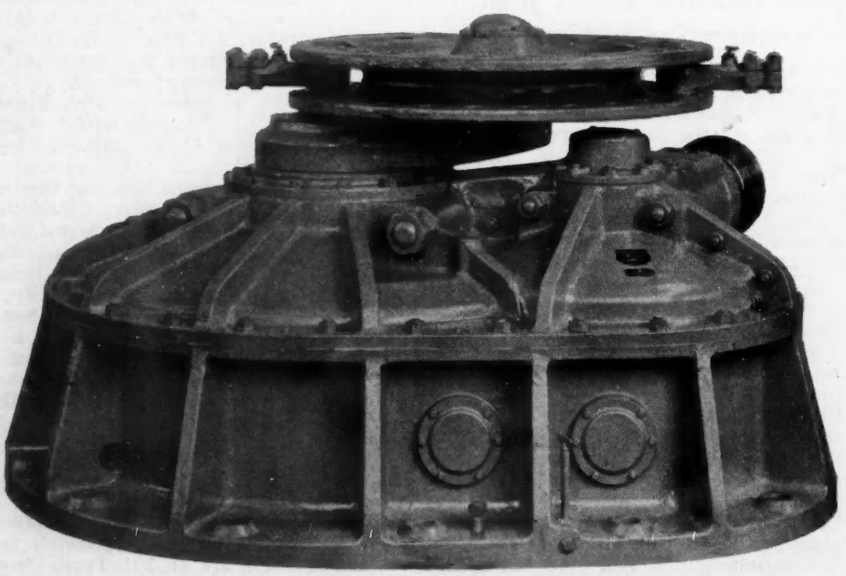
Pumping Power

THE NATIONAL SUPPLY COMPANY

In line with the continued effort toward lower oil-lifting costs The National Supply Company has developed a new and larger National Geared Power. This is known as the Type G-150-B and is made for the heaviest requirements of central power pumping. General design is the same as the Types G-30-B, G-50-B, G-75-B, and G-100-B National Geared Powers. Nominal horse power rating is 144 and API peak torque rating is 714500-inch pounds at 20 spm. Available stroke lengths range from 30 to 40 inches.

The National rotating shaft design used on all National Geared Powers, including the Type G-150-B, brings the pull rod load close to the case and allows an unusually wide spacing of rotating shaft bearings. This construction is particularly effective for providing against the effect of severe well loads and maintaining the rotating shaft in original alignment. In addition the case is used to support the load close to the pull rod itself; the load of the upper bearing being carried by the heavy reinforced upper half of the case.

A feature of the Type G-150-B is the ability to inspect the inside of the case without the necessity of removing the crank or power disc or disturbing the alignment of the gearing. The upper half of the case is split for this purpose. Other features include an adjustable stroke secured by five different positions of an adjustable crank pin. Such stroke changes are made conveniently in the field without disturbing the crank disc assembly. All enclosed parts are lubricated by a removable vane type oil pump located in the center of the hollow intermediate shaft. Oil is distributed automatically by gravity to all points requiring lubrication and the system is effective under all conditions and operating speeds. Well connections are of an improved type. There is no wear on the power disc. This comes on an Alemite lubricated replaceable bronze bushing in the connection itself. The G-150-B Power is made to operate in the open. A V-belt drive with a power shaft extension to reduce the blind angle is generally used. Complete details on this power are included in National Descriptive Bulletin No. 235.



National Pumping Power Type G-150-B

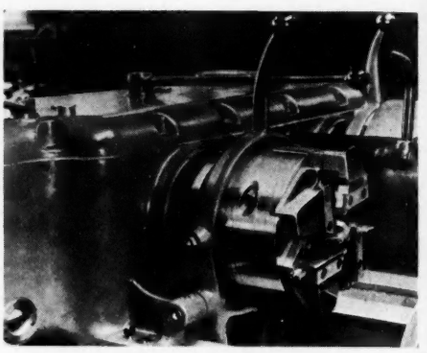
Semi-Receding Head for Cutting Tapered Threads

LANDIS MACHINE COMPANY

Landis Machine Company, Waynesboro, Pa., announce development of a new method for the cutting of tapered threads with Landis Pipe and Nipple Threading Heads.

This new principle of threading incorporates a number of changes in the design of the present threading head but these changes do not affect the outward appearance of the head. The operating mechanism within the head has been redesigned so that as the die head advances under cut the end of the work will contact the reamer and thus cause the chasers to recede to produce a tapered thread. This receding action does not commence until after the first two or three threads are formed. Thus the term "Semi-Receding" is used. The reamer mechanism is used to establish the total thread length, and since the reamer mechanism is in no way connected to the size adjustment mechanism, it is possible to adjust the die head for size without affecting the thread length.

By using the semi-receding action rather than a full receding action the necessity for using a leadscrew to propel the head forward is eliminated. The first two or three threads which are formed before the receding action begins to function are sufficient to provide a lead-nut action for the chasers and the manner in which the chasers are applied to the head provides the correct taper for the first two or three threads.



Landis Semi-Receding Head for Tapered Threads

A much freer cutting action is obtained with the semi-receding head which automatically reduces the cutting strain as the head advances. The quality of the thread produced is improved, the taper will be more accurate and the power consumption will be much lower.

This semi-receding feature is applicable only to Lanco Internally Tripped Pipe and Nipple Heads. Heads of this type can be easily changed over to the semi-receding type.

An application for a patent on this fixture has been filed.

Twin-Motor Tractor

THE GEAR GRINDING MACHINE COMPANY

The Gear Grinding Machine Company, Detroit, announces the Grico Twin-Motor Tractor, putting into practice a revolutionary principle in the field of motor truck transportation and heavy-hauling operations.

With this new tractor the concern now offers a complete and improved line of three separate units designed to meet every trucking requirement. A second device, also newly added, is the trailing axle. The Grico two-axle drive, adaptable to all makes of trucks, will continue to be manufactured. The two new units have been designed for adoption on Ford trucks exclusively, to be marked for sale through distributors of the manufacturer and Ford dealers.

The new Twin-Motor unit consists of the conventional standard Ford cab-over-engine short-wheel-base truck to which has been added a second engine placed immediately back of the cab. The second engine drives another set of wheels through its own drive shaft and rear axle. A streamlined hood, harmonizing with the other sheet metal work of the unit, houses the second engine. The combined horsepower of

IT'S GOT TO BE GOOD!

Inch for inch the rotary pinion shaft is just about the most important piece of steel around a drill rig. Its 40 inches or so of length are packed with potential trouble. If it lets go, things happen.

In rotary pinion shafts — as in many other drilling equipment parts — Molybdenum steel is proving its mettle. In this case it is Chrome-Moly (SAE4140). This steel has the torsional, fatigue and tensile strengths the job requires. It has what it takes to hold up under the stalling shocks caused by plugging the bit in hard formations.

Chrome-Molybdenum and other Molybdenum Steels are at work today wherever oil wells are being drilled or oil produced. They are trouble preventers and money savers. Our booklet "Molybdenum in Oil Production" which gives details about them, is free for the asking.

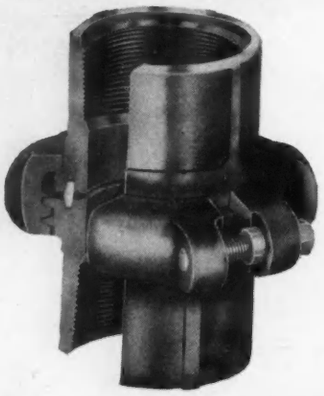
Climax Mo-lyb-den-um Company
500 Fifth Avenue · New York City

MOLY

Red-Rex

ONE-BOLT

PIPE UNIONS



The new Red-Rex Malleable Union, designed for 500 lbs. working pressure and tested to 1,000 lbs., is the sensation of the quick union field. It is made in both "short hub" and "long hub" types, and is identical in construction throughout to the high pressure steel union. Interchangeable seal rings.

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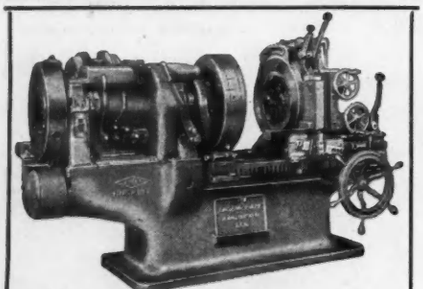

New Landis 4¾ Receding Chaser Pipe Threading Machine

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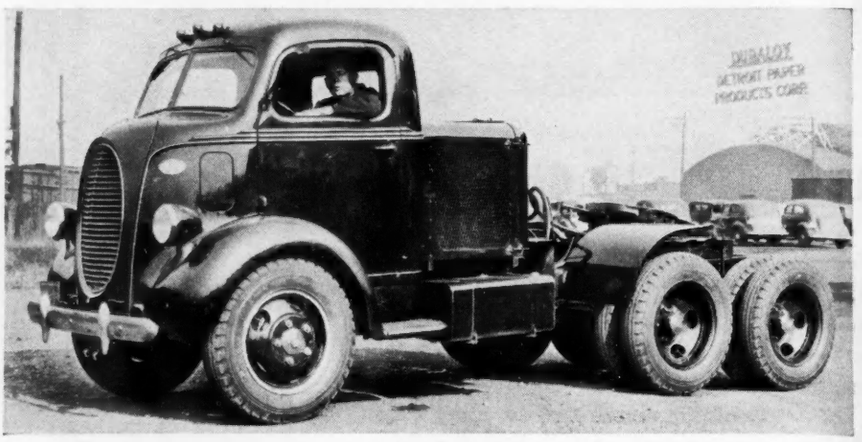
NOTES FOR THE Equipment Buyer and User



Grico Twin-Motor Tractor

the two 95 horsepower motors is 190, with a corresponding increase in rim pull and torque. Company officials point out that the unit was designed and engineered to meet the demand of developing great horsepower in a low net weight tractor combined with stamina, speed and economical operation.

In several thousand miles of closely analyzed operations company engineers cite the remarkable record of economy of this tractor, resulting from the fact that a large, heavy load can be pulled with two engines and the empty trailer can be returned by only one engine. By cutting in the second motor when approaching a grade and pulling a load, the Grico Twin is said to be able to double the power of the truck while continuing at the same speed.

Performing alone, each motor is run by its individual controls. When the two engines are working together they provide dual operation in every respect with the exception that there is a single throttle, single gear shift lever and single brake and clutch pedals. Double compression drag of the two motors which makes for a lighter use of the vehicle's brakes, also provides greater control at all times.

Engineers of the company claim the Twin-Motor tractor has the highest horsepower per pound of vehicle weight and as high a motor torque as any heavy truck on the market

The new tubular trailing axle, designed for Ford trucks, provides for the safe carrying of about 100 percent overload to regular specified tonnage, and is equipped with wheels of regulation size, carrying standard tires and brake drums.

Flexible Couplings

Lovejoy Flexible Coupling Company, 5009 West Lake Street, Chicago, has issued a 14-page booklet on flexible couplings for use on power shafting to absorb shock, vibration, and excessive torque. All types are blueprinted: specifications and prices are included. A selector table in the booklet is a guide to choice of coupling for varying speed and power conditions.

Electric Hoist

CHISHOLM-MOORE HOIST CORPORATION

Chisholm-Moore Hoist Corporation, 364 Fremont Avenue, Towanda, New York, has announced a portable "Comet" electric hoist powered by a specially built heavy duty high torque motor that runs on ordinary light circuit. Construction is compact and rugged but exceptionally light in weight. Precision ball bearings are provided at each rotating point. Gears are precision

Comet Electric Hoist

machined of heat-treated alloy steel. Controller, with patented "delayed reversing" feature operates easily with one hand and affords an extremely sensitive control for lifting the load fractions of an inch. The brake is smooth, quick acting, positive—prevents drifting of load—is easily adjusted; the chain is extra strong, flexible and kink proof. Upper and lower safety stops automatically limit travel of load hook.

The Comet hoist is offered in four capacities: 250, 500, 750 and 1000 pounds, and several speeds. The 500-pound size weighs 85 pounds.

NOTES FOR THE Equipment Buyer and User

Oil Well Supply Company Names Tubular Sales Managers

Oil Well Supply Company recently announced appointment of Russell C. Stamets, Richard F. Cann and James R. Boax as district managers of tubular sales in the Midwest division, comprising all oil producing areas west of the Mississippi River except California.

Stamets goes to Tulsa from Dallas, where he has been supervising tubular sales for several years. He has a wide background of experience in respect to tubular goods, having been connected with National Tube Company from 1903 until he joined the "Oilwell" organization in 1920.

Cann moves to Dallas from Fort Worth, where he has been serving as district sales manager of the North Texas district. He first became associated with "Oilwell" in 1923.

Boax remains at Houston, where he has been acting in the capacity of tubular sales engineer. His experience prior to his connection with "Oilwell," approximately a year ago, included several years as service and sales engineer for National Tube Company.

RUSSELL C. STAMETS

Paul A. Condit Joins Cooper-Bessemer Corporation

Paul A. Condit has recently joined The Cooper-Bessemer Corporation as control engineer. With close control a vital factor in almost every phase of modern manufacturing processes, his experience and ability will be applied toward closely coordinating Cooper-Bessemer gas and Diesel engines, as prime movers, to such processes.

Born near Columbus, Ohio, in 1906, Condit attended Denison, Ohio Northern and Cincinnati Universities for training as an electrical engineer. Upon completing his university studies, he entered into railroad work, being primarily interested in complex circuit and automatic control installation, test and design, in conjunction with continuous, as well as intermittent, inductive automatic train control and automatic interlocking. In 1932, he joined The Pure Oil Company at its Midland refinery. After working in the operating and maintenance departments of various refineries for two years, he was trans-

RICHARD F. CANN

JAMES R. BOAX

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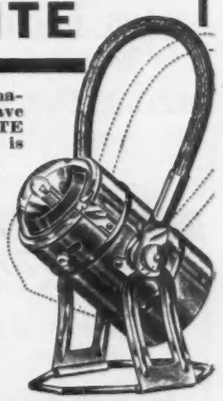

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NOTES FOR THE Equipment Buyer and User

ferred to the company's Chicago offices as assistant chief engineer with duties as electrical and control engineer for all refineries.

In 1937, Mason-Neilan Regulator Company employed Condit as development engineer and he continued in that capacity until his recent affiliation with The Cooper-Bessemer Corporation. He is a member of the A.I.E.E. and a professional electrical engineer.

With his headquarters at the Mount Vernon, Ohio, offices of the corporation, Condit will effect a close liason between the sales and engineering departments in control system problems and his services will be available to all branch offices and sales representatives.

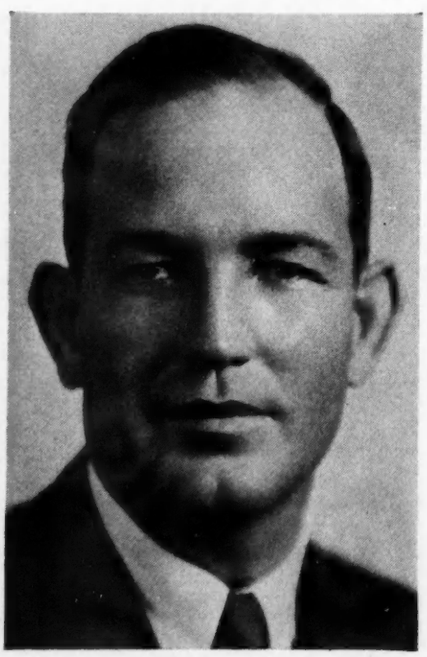
PAUL A. CONDIT

Rieger Joins Texasteel Manufacturing Company

The Texasteel Manufacturing Company, Fort Worth, announces appointment of Goodson Rieger as sales manager for the southwest Texas and the Gulf Coast areas. Rieger, connected with the oil industry since 1918, first started in the boom days of Desdemona and up until a year ago spent nine years as deputy supervisor of the Texas Railroad Commission in charge of the Houston district. Since he left the commission and until recently he has been with Emsco Screen Pipe Company in Houston. Rieger will continue making his home at 2913 Cason Street in Houston and will specialize in the distribution of surface pumping equipment and electric-steel sucker rods and pull rods for his new company.

Claude S. Banta Named Hydril Gulf Coast Sales Manager

Hydril Company has appointed Claude S. Banta sales manager for the Gulf Coast district, with headquarters at Houston.



CLAUDE S. BANTA

Banta studied petroleum engineering at U.C.L.A., and has had wide experience in both the drilling and production divisions of the industry in the Pacific Coast and Mid-Continent areas.

Banta, now in California, will return to Houston about June 1 to assume his new duties.

The Scaife Fellowship at Mellon Institute

Wm. B. Scaife & Sons Company of Pittsburgh has established an industrial fellowship in Mellon Institute for the purpose of conducting scientific research on problems pertaining to processes of fabricating and to the use of metal tanks, pressure cylinders, and water-softening equipment, its principal

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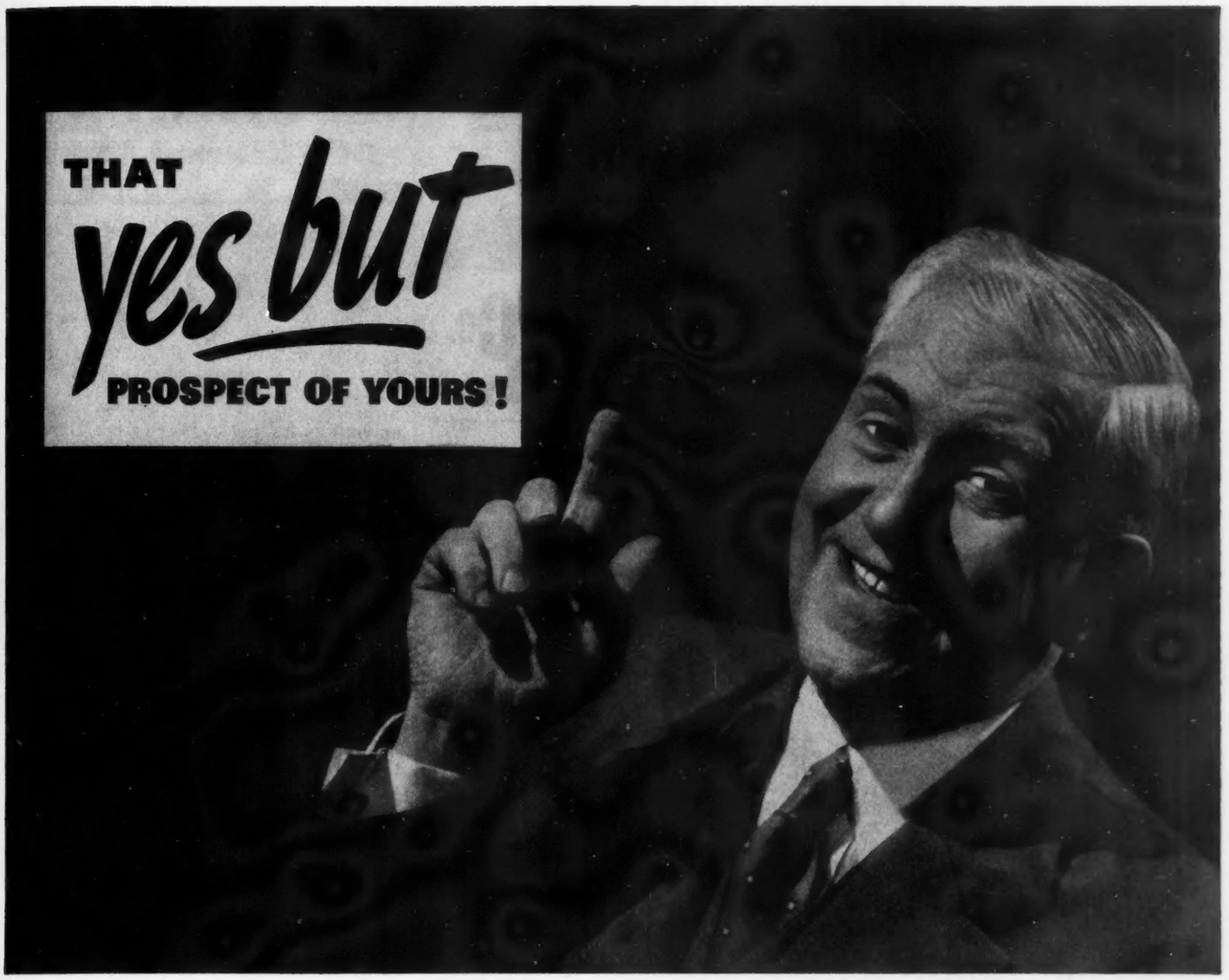

SAD is the day when your salesmen bump into this happy soul . . . this genial buyer who agrees with everything that salesmen say, and signs nothing while they are present. "Yes," he assents. "Yes, indeed, I'd like to buy . . . BUT, I can't do anything until Fall . . ." Always smiling, always agreeable, he affects a mask of sales resistance by pretending to have no resistance at all.

Underneath, these "hard-to-sell" prospects are pretty shrewd fellows. They like to check what they hear against facts from other sources before they make up their minds. That's one of the reasons they read *The Oil Weekly*. And the thing that's important to you is that they hang up their defensive masks then they pick up *The Oil Weekly* to glean progressive ideas about their livelihood. They are with editors in whom they have confidence . . . for whose counsel they have paid cash in advance with voluntary subscriptions.

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THE COMPOSITE CATALOG
OF OIL FIELD AND PIPE LINE EQUIPMENT

Notes for the EQUIPMENT BUYER and USER

products. This investigational work will be in accordance with the company's desire to keep closely informed regarding all technical progress in its own and related fields, with special attention to present and probable future trade requirements, and to effect through research and development all possible improvements in its production practice as well as its products. For many years the company has carried on technical studies in its own organization, but the fellowship at Mellon Institute will enable the Scaife scientific staff to benefit by the investigational and cooperative facilities of the Institute.

Dowell Enters Eastern Kentucky

To keep pace with the renewed interest and activities being shown in Eastern Kentucky, Dowell Incorporated, announces the reopening of its treating station on the L. & N. Railroad Siding at Ravenna, Kentucky.

Carl A. Schacht will be in charge of the new Ravenna Station and may be reached by telephone at Irvine and Ravenna or by mail by Box 175, Irvine, Kentucky.

Earl M. Daniels Returns From West Coast Trip

Earl M. Daniels, general sales manager for Hydril Company, has returned to Houston after a four weeks trip to California.

Bert L. Stone Tours Gulf Coast and Mid-Continent Areas

Bert L. Stone, vice president and general manager of Hydril Company, has returned to his main offices at Los Angeles, after spending several weeks in the Gulf Coast and Mid-Continent districts.

Simplex Jacks at Work Shown in New Bulletin

Templeton, Kenly & Company, Chicago, manufacturers of Simplex Jacks, has issued an eight-page bulletin illustrating and describing many new Simplex Jacks for all oil field services including rigging, pull rod jacks and field boiler supports at work in the oil fields. Over 25 types of jacks in 97 sizes are described. Copies are available upon request.

Orifice Meters

Pittsburgh Equitable Meter Company, Pittsburgh, Pennsylvania, is distributing Bulletin No. 1050 covering the Emco Type 38 Orifice Meter. Nineteen pages are devoted to sketches, cutaway views, and phantom drawings of the meter in addition to a complete description of each part and its function. Installation and calculation tables are included to round out a comprehensive report on the meter.

Squeaks from the Bull Wheel

Grim Deception

A little negro boy going through a cemetery read this inscription on a tombstone: "Not dead, but sleeping."

Scratching his head, and pondering, he finally said, "He sure ain't foolin' nobody but hisself."

Made a Difference

"If your mother were to give you a large apple and a small one and tell you to divide with your brother, which apple would you give him?"

"Do you mean my big brother or my little one, teacher?"

Matter of Form

"Sorry madam, but licenses are only issued when your form is filled out properly."

"Why, I like your nerve! We can get married, no matter what I look like!"

No Shade

"I'm glad my wife's built long and thin like, as ye might say, a shoe string."

"Why's that, Ed?"

"'Cause she don't shade the corn when she's a-hoein' of it like a fat woman would."

Signed On

"Dearest," said the new husband to his bride, "do you really think I'll prove a satisfactory mate?"

"Oh, you'll do for a mate all right," answered his precious girl. "Now look me over and tell me what you think of your captain."

Really Brave

"My father is a brave man, he is. He killed five lions and an elephant in Africa single-handed."

"Bosh, that's nothing, my dad bought a new sedan when ma wanted a coupe."

Finance

His father had given the little Jewish boy a dollar for his birthday. All afternoon the boy had trotted around the neighborhood getting his bill changed to silver at the grocer's, back to a bill at the baker's and so on. His father asked him the reason for his strange behavior.

"Vell," little Ikey said, "sooner or later somebody is going to make a mistake, and it ain't going to be me."

A Split

A tramp stopped at the kitchen door of the farmhouse and asked for something to eat.

"If you'll go out in the woodshed," the farmer's wife told him, "and split up the logs you find there, I'll give you a good meal."

In a surprisingly short time the tramp returned; but an inspection of the woodshed by the good wife showed all the logs carefully split except one gnarled, knotty old stump. Well satisfied, she spread a generous meal before him, and as he ate, she said: "I do wish you'd tell me how you split those logs so quickly and so easily."

"Why, madam, I simply stood beside them and told them funny stories, and they split themselves."

In the middle of the night, there was a great commotion in the woodshed, and on rushing to investigate, the amazing discovery was made that the gnarled, knotty old stump had split itself into a thousand pieces.

It was a piece of English walnut.

Modern Version

"I won't get married until I find a girl like the one that grandpa married."

"Huh; they don't have women like that today."

"That's funny. Grandpa only married her yesterday."

Misinterpretation

"I saw an airplane flyin' today, mom."

"Don't forget your 'g's,' my boy."

"Gee! I saw an airplane flyin' today."

Tough Problem

"You've been out with worse-looking fellows than I am, haven't you?"

She did not reply.

"I said, you've been out with worse-looking fellows than I am, haven't you?"

"I heard you the first time. I was trying to think."

Struggling

"What are you doing in the pantry, Bobby?"

"Fighting temptation, Ma."

Her Part

Pretty Young Wife (at busy crossing): "Now remember, Herbert, the brake is on the left—or is it on the right?—but don't—"

Harassed Husband: "For goodness sake, stop talking. Your job is to smile at the policeman."

The Easier Way

Junior, stop reaching across the table. Haven't you a tongue?

Yes, Mom, but my arm is longer.

At 3 a. m.

Where do you think you're going at this time of night?

To a lecture, Mr. Ossifer.

Cooperation

Panting and perspiring, two Irishmen on a tandem bicycle at last got to the top of the steep hill.

"That was a stiff climb, Pat."

"Sure and it was that. And if I hadn't kept the brake on, we would have gone backward."

Only Alternative

"I suppose one dresses for dinner here?" the new guest asked the small town hotel keeper.

"Well, suit yourself, sir. But I might add that we charge extra for meals served in bed."

On the Safe Side

"Say, sonny, what's the rush?"

"I'm trying to stop two kids from being in a fight."

"Who are the boys, and where are they?"

"Well, I'm one of 'em."

Afoot Again

Yeah, my banker has put me back on my feet.

Good enough. Did he renew your loan?

No, he foreclosed on my car.

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INDEX TO ADVERTISERS

A — Page

J. S. Abercrombie Co. — —
Abercrombie Pump Co. — —
Acme Gas Lift Co. — —
Ajax Iron Works — —
Allsteel Products Manufacturing Co. — —
Alten's Foundry & Machine Works — —
American Askania Corp. — —
American Assn. of Petroleum Geologists — —
American Cable Division of American Chain & Cable Co. — —
American Cast Iron Pipe Co. — —
American Hammered Piston Ring Division of Koppers Co. — —
American Iron & Machine Works Co. — —
American Meter Co. — 29
American Sand-Banum Co. — —
American Steel & Wire Co. — —
Athey Truss Wheel Co. — —
Atlas Drop Forge Co. — —
Atlas Powder Co. — —
Axelson Manufacturing Co. — —

B

Baash-Ross Tool Co. — —
Baker Oil Tools, Inc. — 36-37
Baldwin-Duckworth Chain Corp. — —
Bantam Bearings Corp. — —
Baroid Sales Co. — —
William M. Barret, Inc. — 93
Bartlett-Hayward Division of Koppers Co. — —
Beaumont Iron Works Co. — —
Bethlehem Steel Co. — —
Black, Sivalls & Bryson — —
Hotel Blackstone — —
Bradford Motor Works — —
The Brewster Co. — 93
The Bridgeport Machine Co. — —
Broderick & Bascom Rope Co. — —
A. M. Byers Co. — —
Byron Jackson Co. — —

C

Jo H. Cable — —
Cameron Iron Works — —
Carnegie-Illinois Steel Corp. — —
J. I. Case Co. — —
Caterpillar Tractor Co. — —
Chain Belt Co. — —
Chiksan Oil Tool Co. — —
Clark Bros. Co. — —
Climax Molybdenum Co. — 91
Columbian Steel Tank Co. — —
Continental Oil Co. — —
The Continental Supply Co. — 3
Fred E. Cooper Co. — —
The Cooper-Bessemer Corp. — —
Core Drilling Co. — —
Crane Co. — 7
Crum-Brainard — —
Cummins Engine Co. — —
W. H. Curtin Co. — 94

D

Darling Valve & Manufacturing Co. — —
DeWitt Operated Hotels — —
Diamond Chain & Manufacturing Co. — —
Dowell Incorporated — —
The Dragon Manufacturing Co. — —
E. I. du Pont de Nemours & Co. — —

E

Eastman Oil Well Survey Co. — —
Economy Electric Lantern Co. — 93
Elliott Core Drilling Co. — —
Elmax Construction Co. — —
Enardo Foundry & Manufacturing Co. — —

F

Geo. E. Failing Supply Co. — —
First National Bank & Trust Co. of Tulsa — —
Fluid Packed Pump Company — 68
The Fort Worth Laboratories — 94
Foster Cathead Co. — 67
The Benjamin Franklin Hotel — —
Frick-Reid Supply Corp. — —
Frost National Bank — —

G

Gardner-Denver Co. — 59
The Garlock Packing Co. — —
Gaso Pump & Burner Manufacturing Co. — —
General Electric Co. — —
General Motors Corp. — 61
Geophysical Service, Inc. — —
Goodyear Tire & Rubber Co. — —
H. P. Gott Manufacturing Co. — 97

Page

Grant Oil Tool Co. — —
Gray Tool Co. — —
Green Head Bit & Supply Co. — —
The Guiberson Corp. — —
Gulf Envelope Co. — —
Gulf Publishing Co. — 47, 71, 86 and 96

H

Halliburton Oil Well Cementing Co. — Third Cover
Hamer Oil Tool Co. — 23
Hardway & Cathey — 94
Harnischfeger Corp. — 4
Haynes Stellite Co. — 10
Hazard Wire Rope Division of American Chain & Cable Co. — —
The Hercules Powder Co. — —
The Hercules Steel Products Co. — 71
Hewitt Rubber Corp. — —
Hoard Exploration Co. — 94
Houston Laboratories — 94
Hughes Tool Co. — Fourth Cover
Humble Oil & Refining Co. — —
Hyatt Bearings Division — 61

I

The Inferno Co. — —
Ingersoll-Rand Co. — —
International Harvester Co. — —
The International Nickel Co. — —

J

E. C. Jacobson — 86
Jarecki Manufacturing Co. — —
Jensen Brothers Manufacturing Co. — —
Johns-Manville — —
The Jones Oil Co. — —
The S. M. Jones Co. — 8
Jones & Laughlin Steel Corp. — 49

K

The Kennedy Valve Manufacturing Co. — 87
Keuffel and Esser Co. — 33
Keystone Driller Co. — 96
Kinzbach Tool Co. — 80
Koppers Co. — —

L

Laminated Shim Co. — —
Landis Machine Co. — —
Lane-Wells Co. — —
Larkin Packer Co. — —
The Layne & Bowler Co. — —
Le Roi Co. — —
Lee Rubber and Tire Corp. — —
Hotel Lenox — —
A. Leschen & Sons Rope Co. — —
The Lincoln Electric Co. — —
Link Belt Co. — —
Lone Star Cement Corp. — Second Cover
Lucey Boiler & Manufacturing Co. — —
The Ludlow Valve Manufacturing Co. — —
Lufkin Foundry & Machine Co. — —

M

MacClatchie Manufacturing Co. — —
Macwhyte Co. — 5
D. S. Mair Machinery Corp. — 92
Maloney Tank Manufacturing Co. — —
Manhattan Rubber Division — —
Marmon-Herrington Co. — —
Martin-Decker Corp. — —
Hotel McAlpin — —
McGill Manufacturing Co. — —
McKissick Products Corp. — —
Merco Nordstrom Valve Co. — —
Metric Metal Works — 29
Miller Sand Pump Co. — —
Mission Manufacturing Co. — —
Lee C. Moore & Co. — First Cover
Motor Improvements, Inc. — —
Mudrite Products Co. — —

N

National Bank of Tulsa — —
National Lead Co. — —
The National Supply Co. — 21
National Tube Co. — —
New Deal Specialty Co. — —
Novo Engine Co. — —

O

O.C.S. Manufacturing Co. — —
Walter O'Bannon Co. — —

Page

Oil Center Tool Co. — —
Oil City Brass Works — 94
Oil Well Supply Co. — —
The Oil Weekly — 95

P

The Parkersburg Rig & Reel Co. — 41
Patterson-Ballagh Corp. — —
Pelican Well Tool & Supply Co. — 83
Petroleum Electric Power Club — —
Petroleum Rectifying Co. of California — —
Petty Geophysical Engineering Co. — —
Philadelphia Gear Works — —
Pittsburgh Equitable Meter Co. — —
Pittsburgh Steel Co. — —
Hotel Pittsburgher — —
Plaza Hotels — —
Plymouth Cordage Co. — 77
Portable Rig Co. — —

R

Raybestos-Manhattan — —
Reading-Pratt & Cady Division of American Chain & Cable Co. — —
Rector Well Equipment Co. — —
Reda Pump Co. — —
Reed Roller Bit Co. — 25
Regan Forge & Engineering Co. — —
Reliable Supply Co. — 94
Republic Steel Corp. — 26-27
The Ridge Tool Co. — —

S

Sam Houston Hotel — —
Jack A. Schley — 94
Schlumberger Well Surveying Corp. — —
The Second National Bank of Houston — —
Seismograph Service Corp. — —
Shell — —
SKF Industries, Inc. — —
A. O. Smith Corp. — —
E. M. Smith Co. — —
Howard Smith Co. — —
South Chester Tube Co. — —
Southern Engine & Pump Co. — —
Southern Pacific Lines — —
Spang & Co. — —
Spang Chalfant, Inc. — —
Sperry-Sun Well Surveying Co. — —
Standco Brake Lining Co. — 92
Star Drilling Machine Co. — —
Stevens Hotel — —

T

Templeton, Kenly & Co. — —
Texaco Development Corp. — —
The Texas Corp. — —
Texas Electric Steel Casting Co. — —
Texas Foundries, Inc. — —
Texas Iron Works — —
Thermoid Rubber, Division of Thermoid Company — —
The Timken Roller Bearing Co. — 19
Edgar Tobin Aerial Surveys — 71
Town House Hotel — —
Tretolite Co. — 31

U

Union Wire Rope Corp. — —
Union Carbide & Carbon Corp. — 10
Unit Rig & Equipment Co. — —
United States Rubber Co. — —
United States Steel Corp. — —
Universal Atlas Cement Co. — —

W

Warner & Swasey Co. — 39
The Watson-Stillman Co. — —
Waukesha Motor Co. — 79
Webster Engineering Co. — —
Westinghouse Electric & Manufacturing Co. — —
The Wheland Co. — 6
Wickwire Spencer Steel Co. — —
J. H. Williams & Co. — —
Paul B. Williamson — —
Wilson Supply Co. — —
Witte Engine Works — —
Worthington Pump & Machinery Corp. — —
Wyatt Metal & Boiler Works — —

Y

Youngstown Sheet & Tube Co. — —